12-2003

Assessing environmental concern, health, and justice in Claksville, Tennessee

Shirley Ann Rainey

To the Graduate Council:

I am submitting herewith a dissertation written by Shirley Ann Rainey entitled "Assessing environmental concern, health, and justice in Claksville, Tennessee." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Sociology.

Robert Emmet Jones, Major Professor

We have read this dissertation and recommend its acceptance:

Accepted for the Council:

Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

To the Graduate Council:

I am submitting herewith a dissertation written by Shirley A. Rainey entitled "Assessing Environmental Concern, Health, and Justice in Clarksville, Tennessee." I have examined the final paper copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Sociology.

Dr. Robert Emmet Jones,
Major Professor

We have read this dissertation and recommend its acceptance:

Acceptance for the Council:

Vice Provost and Dean of Graduate Studies

ASSESSING ENVIRONMENTAL CONCERN, HEALTH, AND JUSTICE

IN CLARKSVILLE, TENNESSEE

A Dissertation
Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Shirley A. Rainey
December, 2003

Dedication

This dissertation is dedicated to my deceased parents, *Reverend-Sister* Lois J. Edwards and Willie Edwards, my children, Shir-earn, DeAndrew and Earnest Jr., and to all of my family, relatives and dear friends for always believing in me, inspiring me, and encouraging me to climb as high as I can to help fulfill God's wishes.

Acknowledgments

I wish to thank all those who helped me in completing the Doctor of Philosophy in Sociology. I thank Dr. Robert Emmet Jones for his guidance in helping me to reach my full potential. I thank Dr. Thomas Hood, Dr. Faye Harrison and Dr. Asafa Jalata for serving on my committee and also for their ideas and valuable guidance all through the research work.

I thank Reverend George Fort and Wiley Moore of Clarksville, Tennessee for playing a key role in providing informants of contact to interview for this study. Also, the staff of the Geographic Information Systems (GIS) Austin Peay State University for help with the census tracts data. A special thanks to several special friends, Mary Bell Witherspoon, Mary Joseph, and Dr. Charles U. Smith, whose moral and spiritual guidance, suggestions and encouragement made this work possible.

Last but not least, I would like to thank the University of Tennessee for the "Minority Black Fellowship Award" and Austin Peay State University for the, " Greir-Grow Your Own Scholar Program Award."

Abstract

This dissertation examines public concern for the environment, public perceptions of environmental health problems and environmental injustice among residents living in Clarksville, Tennessee. Eleven hypotheses pertaining to environmental concern, health and justice between blacks and whites and among blacks are discussed and tested. Support for each hypothesis was judged by analyzing data from in-depth interviews and a mail survey of a random sample of residents living in and around the Red River community of Clarksville, Tennessee. Independent Sample T tests, bivariate correlations, and stepwise regression analyses were used to test these hypotheses. Results showed that blacks are more concerned about environmental problems in their neighborhood, about the quality of its overall environment, and about the seriousness of these environmental problems than whites. Males, Democrats and older black people were found to be more concerned about the environment than their respective black counterparts. Although perceptions of environmental health and race accounted for much of the variation in environmental concern, persistent inequities in potential exposure between groups (blacks and whites) were found. Blacks expressed a greater concern about environmental injustice and adverse health effects from exposure to contaminants than whites. Recommendations are offered for addressing these inequities and for future research.

Table of Contents

List of Tables

Chapter I: Introduction

Overview

Environmental degradation is everywhere--where we live, work, and play (Bullard, Johnson, & Wright, 1997; Bullard, 1990). Since the 1980s, researchers have documented that people of color (African Americans, Hispanics, Asian/Pacific Islanders, Native Americans) and the poor are disproportionately exposed to environmental hazards (Bullard & Johnson, 2000; Bullard, 1990; United Church of Christ, 1987; Mohai, 1985; United States Government Accounting Office, 1983). Ample evidence exists to show that race and class are the most important determinants of the location of environmental hazards and resultant health effects (Bullard, Warren, & Johnson, 2001; Foster, 1993; Bullard, 1990; UCC, 1987).

Blacks and poor people are more likely to be exposed to the worst toxins. They suffer the highest levels of lead and pesticide poisoning and live in areas that have the least environmental protection (Bullard, Moore, & Cole, 2002). Communities of color and the poor have also paid a greater price than more affluent communities in terms of health and lower property values caused by environmental degradation. Moreover, scholars (Bullard, 2000; Grossman, 1993) have pointed out that people of color are largely excluded from participating in environmental decision-making.

Indirect institutional racism is perceived by environmental justice advocates as the main reason for inequalities in decision-making. Environmental justice advocates charge that powerful political and economic social structures target hazardous waste siting and

exposure to contaminants in communities of color because they are powerless, less informed, and less organized (Bullard, 1993; 1983; Bullard & Feagin, 1991). According to Oliver and Shapiro (1995, p. 34) racism both justifies and dictates the actions and institutional decisions that adversely affect the target group.

The bulk of the research on environmental justice issues has focused on establishing a correlation between the relative location of hazardous facilities and people of color and the poor communities. The tenet of the environmental justice movement is that people of color and the poor bear a disproportionate share of America's environmental hazards. The fact that people of color and the poor are exposed to environmental stressors and living in ecological devastation is believed to be caused by environmental discrimination. They live close in proximity to hazards and suffer more adverse health effects than whites(Fleming & Gemery, 1992). Many communities of color are forced to live with the hard realities of environmental injustices while more privileged groups live in clean and unpolluted communities.

A number of studies (e.g., Bullard & Johnson, 2001; Harley, 1995;Westra, & Wenz, 1995;Adeola, 1994; Bailey, Faupel & Alley, 1994; Bouland, 1993; Arrandale, 1992; Bullard, 1990; Barsh, 1990;Bullard & Wright, 1987; Collete, 1985) have provided strong data to support the argument that environmental racism exists when it comes to the siting and placing of waste sites and other environmental hazards in communities inhabited by people of color and the poor. Grossman (1993, p. 333) puts environmental injustices in a historical context: the history of oppression and exploitation in the form of genocide, chattel slavery, indentured servitude and racial discrimination in all other

aspects of life in the United States. He argues that racism is woven into the fiber of society and that the oppressive subordinate position of people of color makes them vulnerable targets for environmental racism.

As indicated by research, race and class are the determinants of environmental exposure. Harrison (1995) argues that class mobility does not resolve problems of race even for the black middle class and that they confront more obstacles than do whites with comparable education, employment and credit rating profiles. In fact, studies (United States Accounting Office, 1983; The United Church of Christ, 1987; Bullard, 1990; Mohai & Bryant, 1998; Bullard, 1995;Albrecht, 1995;Brown, 1994) have supported the conclusion that race plays the largest role in the location of hazardous facilities.

Analysts have also pointed out that there has been very little research conducted in the last two decades on the environmental concern of blacks and the social bases of support for this concern (Jones & Carter, 1994; Baugh, 1991; Mohai, 1990; Taylor, 1989). Indeed, almost all of the research in the United States on public concern for the environment has been based on the opinions of the white majority (Jones, 1992). Consequently, there has been a very limited amount of research on black public opinion on the environment (Jones, 1998). Most researchers assumed that blacks were not concerned about the environment and that a "concern gap" existed between blacks and whites on the environment (Taylor, 1989). More recent studies have found that black people are concerned about the environment, and some cases, even more concerned about specific environmental problems than whites (Jones, 2002; Parker & McDonough, 1999; Mohai & Bryant, 1998; Arp & Kenny, 1996; Jones & Carter, 1994; Mohai, 1990). In

fact, several scholars (Jones, 1998; Jones & Carter, 1994; Mohai, 2003) have argued that the idea that blacks and other people of color are not concerned about the environment is largely a myth but that it still persists among the media, in academic circles, and among policy-makers even though there is little research to support it.

Based on research on environmental concern and justice, it would seem reasonable to assume that those who have a greater concern for environmental problems also feel that they suffer more from environmental health problems and have been exposed to more environmental injustices. However, possible linkages between attitudes of blacks and whites toward the environment, and their perceptions about environmental health and environmental justice problems, have yet to be empirically examined.

Bullard (2002) provides a strong case why blacks should be more concerned about the environment. He argues that black people need a "laser-like focus" and should become concerned about such issues as environment and economic justice, public health, livable communities, pollution prevention, brownfields redevelopment, clean production, transportation, air quality and urban sprawl. These environmental problems are destroying their quality of life as well as their health both mentally and physically, especially their children's health from exposure to lead-based paint.

The purpose of this dissertation is to examine these possible attitudinal linkages among blacks and whites living in and around the Red River community (RRC) of Clarksville, Tennessee by examining data obtained from in-depth interviews of long-term members of the RRC and a mail survey of blacks and whites living in or around this community. It will also examine the social bases of environmental concern among blacks

by trying to identify relationships between key socio-demographic variables (e.g., age, education, household income, political affiliation) and three indicators of environmental concern. Dunlap and Van Liere (1980) and Jones and Dunlap's (1992) comprehensive reviews of the social bases of environmental concern among the general public found that younger people, those with higher levels of education and political liberals expressed higher levels of environmental concern. But again, very little research has focused on examining whether there are similar socio-demographic differences among blacks.

Research Questions

Specifically, my study attempts to answer three research questions:

Research Question #1:	**Are blacks more concerned about environmental problems, have more environmental health concerns, and feel they have been more exposed to environmental injustice than whites?**
Research Question #2:	**Is there a relationship between environmental concern, perceptions of environmental health and environmental justice, and race?**
Research Question #3:	**What are the social bases of environmental concern among blacks?**

The rest of Chapter I provides a background of Clarksville and the Red River community (RRC) in Middle Tennessee. Chapter II provides a detailed review of the literature and concludes with a discussion of the specific hypotheses tested in the study along with their theoretical rationales. Chapter III describes the methods and the procedures used in the in-depth interviews and the mail survey. Chapter IV presents the finding from the in-

depth interviews and the results of the mail surveys. Chapter V summarizes the study, its findings and results, and examines their implications.

Background of Study Area

This section of Chapter I discusses three important contextual aspects of the study: (1) The historical roots of black population in Clarksville and in the RRC, (2) their social demographic characteristics, and (3) environmental problems facing, Clarksville, the RRC and other nearby communities.

History of Blacks in Clarksville

Documenting black history in Clarksville, Tennessee has been an ongoing struggle for historians and activists. Most of this history is derived from news clippings, pictures, letters, diaries, and oral histories from older residents. Blacks moved to Clarksville during the early 1800s as slaves of early white settlers and worked the tobacco fields. As anti-slavery sentiments increased in the 19th century, the establishment of Clarksville's first constables were built with the purpose of controlling slaves determined to gain their freedom (Dunn, 2002). As the Civil War raged, some blacks joined the Union Army and others created a shanty town along the river.

The early 1930s, 1940s, and 1950s were very difficult times for blacks living in Clarksville. They had to endure racial discrimination, segregation, oppression and other forms of unequal treatment by whites. Nonetheless, blacks succeeded in the arts, music and sports (Dunn, 2002). Several talented persons (e.g,the Suggs brothers, Bubba Suggs,

Claude Roberts, Emma Jean Dunlop, Moss-Horne, Chester Johnson, J.J. Ramey, Melva Boyd, Evelyn White, Keith Wilson, and Wilma Rudolph) went on to make their marks on the world (Shaw, 2002). A native of Clarksville stated, "In the early days we had a wealth of entertainment because we had a wealth of venues. Musicians had a place to practice their craft then, and we just do not have that now" (Shaw, 2000).

The black community in Clarksville existed into the 1930 and early 40s as a community with corner markets, churches and a hospital. It was in the late 1940s, however, with the closing of the first and only black hospital, Burt Home Infirmary, that conditions changed dramatically and became worse for blacks. For example, blacks had to travel more than 50 miles to MeHarry Medical Hospital in Nashville, Tennessee to seek medical assistance. They were denied medical service at the local hospital in Clarksville and could only visit local doctors who had separate waiting rooms for blacks and whites (Forte, personal communication, September 20, 2002).

During the 1960s, the schools that black students attended were closed due to integration. Eventually, most of the black-owned businesses were closed as well, leaving only a very few, mostly funeral homes, barber/beauty shops, and clubs (Dunn, 2002). Over the years, the black churches have had a sustaining influence for black people in the face of oppression in Clarksville. Local churches, organizations, and social groups (e.g., Benevolent Lodge Order 210 and local chapter of the National Association for the Advancement of Colored People) helped form networks to fight against oppression and bring about greater social justice for blacks and the poor in Clarksville (Dunn, 2002). Most of the leaders of the civil rights movement in Clarksville are highly

respected ministers of the local community. Today, the black church remains a strong force in the Red River community.

The local branch of the NAACP continues to fight for justice and equality in Clarksville, Tennessee. Several recent civil rights struggles in which local residents and the NAACP have been involved are protesting against the police department for discriminating against black police officers, racial profiling, and the impact of housing and rezoning districts that negatively affect the black community's access to political positions in local government (Forte, personal communication, September 24, 2002). Although there has been some economic progress for blacks in Clarksville, the majority reside in segregated communities that are adjacent to polluting industries and lag behind other groups in terms of employment, housing and income.

In the early 1980s, the Red River District Project group was organized by local residents who organized to bring about social justice in urban development and a better quality of life in the Red River community. The Red River community was designated as a Community Development Block Grant (CDBG) by the federal government to receive federal funding for urban development in the 1980s. The Clarksville City Planning Office, the agency to receive the federal funds and responsible for distribution of these funds, has provided limited financial resources to help in urban development projects in the Red River community. Members of the Red River District Project group have stated that they feel the political and economic process is unfair and unfavorable in providing needed funds for improvements of the Red River community because it is mostly a black and poor community. Some members of the committee have charged that the Clarksville

City Planning offices distributed funds to other project initiatives and not to the community to which the funds are supposed to go. Also, some feel this practice is based on racism. For example, a leader of the Red River District Project grassroots movement stated, "They [the City Planning Office] are racist and do not want to give us the money to help us because we are poor and living on a fixed income" (Benton, personal communication, August, 2002).

In order to address racial discrimination, segregation and oppression, blacks mobilized over the years and formed a number of civil rights groups. Even though Clarksville has experienced enormous economic growth and progress, the struggle continues for social equality for blacks (see Appendix A).

Social Demographics of Clarksville and the Red River Community

Montgomery County includes the city of Clarksville, the fifth largest municipality in Tennessee, and the fastest-growing city in the state (Census, 2000). Clarksville is the county seat and is a peninsula at the confluence of the Cumberland and Red Rivers. Clarksville was established as a city in 1784. It occupies 75 square miles and consists of about three-quarters (103,455) of the population of Montgomery County (Census, 2000). It has become a regional hub for education, health care, retail establishments, and jobs .

The Red River community (RRC) had a total population of 2,579 in 2000 (US. Census 2000). It includes: 1,180 whites (46%), 1,263 blacks (49%) and 136 (5%) persons belonging to other ethnic/nationality groups; 19.5 percent are children less than 18 years of age, 62 percent between 18 to 44 years of age, and 18.3 percent 45 years of

age and older (U.S. Census, 2000). It is largely a lower-working class community with a very high percentage (40%) of its residents living in poverty. In fact, the United States Census Bureau (2000) data reveals that the RRC has the lowest median income, highest poverty level and the highest unemployment rate in Clarksville (see Appendices B, C).

In summary, Clarksville has become the fifth largest city in Tennessee. The overall economy appears to be good as evidenced by more people in the labor force and a low unemployment rate (4.9%). Unfortunately, blacks, and particularly those in the Red River neighborhood have not achieved this economic growth in comparison to their counterparts. The unemployment rate in the Red River neighborhood is 25.1 percent. Data reveal that it has a higher concentration of the blacks and poor people (40%) than any other area in the county (U.S. Census, 2000).

Environmental Problems Facing Clarksville and the Red River Community

An Environmental Defense Fund (2000) study reveals that Montgomery County has more reported total environmental releases of zinc compounds (13,486,681 Ibs.) than any other county in Tennessee. In fact, the EPA's (2000) report reveals that the county faces a cancer risk more than 100 times greater than the goal set by the Clean Air Act. Also, the United States Environmental Protection Agency's (EPA) 2000 Toxic Release Inventory (TRI), which provides annual reports on toxic chemicals that are emitted into the environment from manufacturing facilities, reported that Pasminco Zinc Corporation was the most polluting and dirtiest industry in Clarksville, producing toxic environmental releases of 15,524,118 pounds compared to Trane industry at 93,173

pounds and Midwest Zinc at 38,542 pounds. An Environmental Protection Agency's study on environmental justice (2002), reveals that people of color are more at risk from exposure and adverse health effects than other groups in the county.

The picture of the neighborhood is one of urban blight with decaying structures, empty lots, lack of property maintenance, and a decaying infrastructure of streets, lights, and utilities. It consists of a disproportionate number of vacant lots (176) which resulted as the original housing stock decayed and owners abandoned or demolished houses that previously existed (see Appendix D). Most of the houses in Red River are rented (51.7 percent) and residents say that owners do not care about their upkeep because of the low rent. Consequently, few housing improvements have been made to maintain the rental homes in the Red River community. Most of the residents in the Red River community are living in unfavorable and unsanitary conditions, as evidenced by broken air conditioners and heaters, leaky roofs and faucets, pest infested living quarters, and a host of other dilapidated interior and exterior conditions (see Appendix D). The neighborhood streets are littered with trash, liquor bottles, and hypodermic needles and are frequently the scene of drug sales and use. However, once a year, the residents of the Red River community have a clean up day, where residents come together and spend the day removing debris, garbage, and litter (Anderson, personal communication, August, 2002).

Another major environmental problem is exposure to lead poisoning, which is greater among younger children and older members of the neighborhood who have been exposed to lead over a long period of time. In fact, an EPA (2002) study revealed that more than 23 percent of the housing units in the Red River neighborhood have a high

risk of lead poisoning. Lead exposure occurs in and around the home because of deteriorating lead-based paint, lead-contaminated dust, and lead-contaminated soil. Elevated exposure to lead causes serious health problems, such as disrupting normal neurological development in young children. Residents have voiced some concern about neighborhood children having low IQ levels, hearing problems, and learning disabilities.

Another environmental concern is the impact of an old garage dump on the health of people living in the Red River neighborhood. Several of the older residents have stated that as young children they used to watch large trucks bring loads of garbage to a nearby landfill. The Lincoln Home Housing Project was later built where the landfill was previously located in the this community. Older residents are concerned about the effect of the old dump on their health. Some residents spoke of persons with illnesses such as asthma, cancer, breathing problems, and respiratory problems (e.g., bronchitis). They also expressed concern about children in the neighborhood with learning difficulties, aggravation of asthma, increased frequency of physicians visits for coughs, and a number of children with behavioral problems. Residents who are aware of the nearby landfill are the older residents who have lived in the Red River neighborhood a very long time. Also, some residents mentioned another landfill in their neighborhood adjacent to the Red River that now lies as open space.

The Red River is adjacent to this neighborhood and is one of the most polluted rivers in Tennessee. For many years, residents of the Red River neighborhood have played, fished, and eaten from the Red River. Several studies conducted by Austin Peay State University's Center for Field Biology have documented high pollution levels and

toxins in Red River but little has been done by the City Government of Clarksville. A recent study (Finley, 2002) reported an unusually high rate of siltation (soil that washes into rivers and causes pollution), elevated fecal coliform (bacteria and solid human and animal waste), pathogens, pesticides, mercury and contaminated sediments, polluted by DDT, poly-chlorinated biphenyls (PCBs) in the Red River. These toxic chemicals have polluted the Red River for years and they and other environmental problems continue to plague this community.

Finally, the Red River community is adjacent to several polluting facilities as well as a few brownfield sites. Brownfields are former industrial and commercial sites where redevelopment is complicated by real and perceived contamination (Business & Legal Reports, 2003). Frosty More manufacturing existed as a meat packing industry for many years employing several hundred people in the community. Due to financial problems, the company eventually had to file bankruptcy and closed its doors in 1978. Unfortunately, the site where Frosty More was located remains vacant and no redevelopment initiatives have been taken by the City of Clarksville's political system. As described by Rev. Fort, an older resident in the Red River community, it was "a slaughterhouse that butchered hogs and cows. We had to work in that nasty and smelly place."

Overall, it is clear that the Red River Community area has more than its fair share of environmental problems. Residents in the Red River community are more at risk of environmental stressors as evidenced by water pollution from the Red River, lead poisoning that affects children and older persons, landfill problems, deteriorating

housing and brownfields. The Red River District project has been trying hard to address urban development problems with limited success. They are aware of environmental problems but do not know how to solve them.

Chapter II: Literature Review, Theory and Hypotheses

Overview

Three bodies of research relate to this study: (1) studies that address the environmental concern among blacks and whites, (2) studies that examine the social bases of environmental concern and (3) studies that address environmental justice issues. This chapter provides an overview of key studies published prior to the 1990s and a more detailed review of key studies published after 1990.

Research on Environmental Concern among Blacks and Whites

The bulk of literature on race and the environment is composed of research that has examined apparent differences between blacks and whites. Analysts have used a variety of theoretical rationales such as Maslow's Hierarchy of Needs, Environmental Deprivation, Cultural Differences Thesis, Barrier theory, and the Economic Contingency hypothesis to explain these apparent differences between blacks and whites (Jones, 2002; Parker & Mc Donough, 1999; Taylor, 1989). Most of these theoretical rationales assume that blacks are significantly less concerned about the environment than whites (Jones, 2002).

Maslow's Hierarchy of Needs assumes that before people can begin to focus on higher order needs such as aesthetics, more basic survival needs must first be satisfied. For example, it could be assumed that because of their economic status blacks would be more concerned about basic survival needs such as food, shelter and job security than environmental quality.

The Cultural Differences thesis suggests that attitudes toward nature are conditioned by peoples' cultural backgrounds and experiences. Since assumed cultural differences and experiences exist between blacks and whites, different attitudes towards the environment are assumed to result (Mohai & Bryant, 1998). For example, Taylor (1989) argued that the "concern gap" was a result of negative cultural experiences such as slavery, segregation, access and civil rights. Taylor (1989) argued that during slavery, the land was used by whites as a place of punishment and imprisonment, thus instilling a fear of the land. She also stressed that after slavery ended, continued racial discrimination barred blacks from access to natural recreational areas such as beaches and parks. Taylor (1989) noted that lack of access and thus opportunity to experience outdoor recreational activities may have historically inhibited blacks from developing interest in and appreciation of the natural environment (Mohai, 1998, p. 479).

Black activism during the 1960s and 1970s in the civil rights struggles focused more on promoting social justice in housing, jobs and education and less on environmental issues and led some to believe that blacks were not concerned about the environment (Taylor, 1989). A few analysts (Jones & Carter, 1994; Jones 1998, 2002; and see, Mohai, 2003) believe that the strong social, political and economic pressures (high unemployment, job blackmail, instability of the economy), faced by blacks during the 1970s and 1980s, along with misperceptions, suspicions, and stereotypes, led people to infer this but that it was unjustified.

Several rationales have been used to bolster this faulty assumption. For example, the "Barrier rationale" proposed by Parker and McDonough (1999) assumes that blacks

and whites have similar attitudes toward the environment but barriers that blacks encounter hinder them from acting on their concerns. The Economic Contingency hypothesis assumes that economically vulnerable groups (those living in low-income households, people of color, and women) will withdraw more support from environmental concern during hard economic periods than more economically advantaged groups such as those living in higher income households, whites, and males (see, Dunlap and Jones, 1992; Jones, 1998; 2003).

In fact there has been widespread assumption that concern for the environment was primarily a white, upper-class phenomenon (Newel & Green, 1997; Jones, 1998; Taylor, 1989). Several investigators (Mohai, 1985; Morrison & Dunlap, 1986) examined this assumption of environmentalism being a concern among elites. Their studies revealed that environmentalism was not an elitist phenomenon and concern for the environment was widespread among all groups of people. However, Taylor's (1989) review of 17 studies concluded that blacks were less informed, unaware, and less concerned with environmental issues than whites. She therefore concluded that a "concern gap" existed between blacks and whites on these issues.

Although previous theoretical explanations assume that blacks are less environmentally concerned than whites, the Environmental Deprivation/Differential Exposure hypothesis assumes that direct experience with, or exposure to pollution, leads to greater concern about it (Mohai & Bryant, 1998; Lowe & Pinhey, 1982). Therefore, blacks who are more likely to be burdened by pollution and toxins will be expected to express greater concern than whites over local environmental problems.

It was not until the early 1990s that the concern gap hypothesis was openly challenged. Several studies by Jones over the last decade examined blacks' environmental concern and found that this assumption was based more on a myth than reality (Jones, 2002, 1998; Jones & Carter, 1994). From his review of the literature, he was able to identify four major hypotheses about race and environmental concern. They are as follows: (1) Blacks do not care about the environment that in fact, environmentalism is just a "white thing"; (2) Blacks are concerned but less concerned than Whites; (3) Blacks are concerned but place higher priority than Whites on social concerns such as crime prevention, drug problems, health care needs and other quality of life issues; and (4) Blacks will withdraw more support from environmental issues during hard economic times (Jones, 2002, 1998; Jones & Carter, 1994).

His review of the literature along with a longitudinal study of NORC, GSS survey data from 1973-1990, revealed that blacks were just as concerned and in some cases more concerned about the environment than whites and that blacks and whites may have different sets of environmental concerns. For example, blacks are more concerned about toxic problems whereas whites are more concerned about global warming problems. Moreover, blacks' support for the environment remained remarkably stable, while concern for the environment among whites declined during years of recession and other economic hard times. His research revealed that a "concern gap" did not exist between blacks and whites, that blacks were just as concerned about environmental issues as whites. Also, he was critical of Taylor's 1989 review of a "concern gap" because it was restricted to only those studies that supported the concern gap hypothesis and many of the

studies she reviewed had limited validity, reliability, and generalizability.

Other studies support Jones' contention that blacks are just as concerned about the environment as whites (Mohai & Bryant, 1998; Arp & Kenny, 1996; Adeola, 1994; Arp, 1994; Mohai, 1990). Mohai and Bryant (1998) examined possible differences between blacks and whites about environmental quality in the Detroit metropolitan area and found few differences between them. Their study found no support for Maslow's Hierarchy of Needs and the Cultural Differences theories that assume that blacks should be less concerned about the environment than whites. Mohai's 1990 study also revealed that the degree of environmental concern among blacks and whites was the same.

Parker and McDonough (1999) tested a hypothesis based on the theoretical works of Gooley (1992) and others and applied it to explain differences in environmental concern among blacks and whites. They suggested that the Barrier theory would assume that blacks and whites have similar environmental attitudes but due to differences in participation styles, barriers to joining environmental groups, and feelings of disenfranchisement and powerlessness, blacks are less likely to act on their environmental concern. Results of their study, however, reveal no differences in environmental attitudes and behavior between blacks and whites.

Research by Arp (1994) in Louisiana revealed that blacks were more concerned than whites because they were more exposed to environmental hazards. In a later study, Arp and Kenny (1996) examined attitudes of blacks within three predominately black communities (Homer, Wallace and Alsen) in Louisiana. Each of these communities were facing proposed or existing threats from hazardous industrial facilities and the study

found similar attitudes toward the environment among black residents, regardless of the seriousness of the threat. Thus, it appears that environmental discrimination and environmental concerns are related and this relationship needs to be further examined (Arp, 1994).

Overall, the research on environmental concern provides little support for the claim that blacks are not concerned about the environment, and does support the claim that blacks and whites seem to share a moderate level of concern for the environment. Most of the theoretical explanations (i.e., Maslow's Hierarchy of Needs, Cultural Differences, Barrier Theory, Economic Contingency hypothesis) used to explain assumed differences between blacks and whites therefore have little or no empirical support.

Research on the Social Bases of Environmental Concern

This section will review literature on the social bases of environmental concern. The social bases of concern are demographic variables such as age, education, income, political ideology, political party, gender and race that are thought to be related to environmental concern. This review will show how environmental concern varies among demographic groups such as age, education, income, political ideology, political party, residence, gender and race.

Research conducted during the 1980s on these so-called "social correlates of environmental concern" focused most on age, education, social class, residence, political party, political ideology, and gender. Since the 1990s, researchers have extended their inquiry to include race as another potential social correlate of environmental concern.

The overall research into the social correlates of environmental concern reveals significant but relatively weak relationships between these demographic variables and environmental concern.

Dunlap and Van Liere's (1980) review was the first comprehensive study to examine the social correlates of environmental concern. In reviewing the literature, Dunlap and Van Liere (1980) identified and assessed several major hypotheses concerning the social bases of environmental concern. Each of these will be briefly discussed below:

- **Age:** This hypothesis assumes that younger people tended to be more concerned about environmental quality than older people. The theoretical rationales given for this hypothesis are the "life-cycle effect" and the "cohort effects." Life-cycle effects are the effects of being at a certain stage in one's life; cohort effects are the effects of belonging to a certain generation. Some propose that younger people are less integrated into the society and generally have nothing to lose because they have less income to tax than their counterparts. Others have theorized that due to the dislike for change and differences that the elderly have, it is logical to expect younger people to be more environmentally concerned than their predecessors (Van Liere & Dunlap, 1980).

- **Social Class:** This hypothesis assumes that environmental concern increases with social class as indicated by education, income and occupational prestige. One explanation for this hypothesis is people with "postmaterialist" values will tend to

have higher-prestige occupations, incomes and higher education, thus making them more free to focus on environmental quality than less educated, lower income and lower-prestige occupations.

- **Residence:** This hypothesis assumes that urban residents are more likely to be environmentally concerned than rural residents. The theoretical explanations for this hypothesis are as follows : (1) urban residents should be more concerned because they are more likely to be exposed to higher levels of environmental stressors living in the inner cities; (2) rural residents are more likely than urban residents to have a utilitarian orientation toward the natural environment since they are involved in jobs such as farming, logging and mining.
- **Political Affiliation and Ideology:** This hypothesis assumes that Democrats and political liberals are more concerned about environmental quality than Republicans and political conservatives. This hypothesis is based on the premise that environmental reforms are opposed by formal organizations because they require limitations of their activities, new regulations and innovative action. Since republicans political conservatives favor big business, they would be less concerned about environmental quality.

Dunlap and Van Liere's (1980) review of evidence on the social bases of environmental concern revealed that only three of the five hypotheses: age, education and political ideology, were moderately associated with environmental concern. They concluded that younger people, those with higher levels of education, and political liberals generally expressed higher levels of environmental concern. Thus, urbanites,

Democrats, and those whose jobs had greater prestige were significantly more concerned about the environment.

Many recent studies (Ozanne, Humphrey & Smith, 1999; Davidson & Freudenburg, 1996; Greenbaum, 1995; Arp, 1994; Jones & Dunlap, 1992; Samdahl & Robertson, 1989; Taylor, 1989; Dunlap & Van Liere, 1980) have found similar results. Research on environmentalism among residents of the Southern Appalachian ecoregion by Jones et al, (2000, 1999) found that rural residents are just as concerned about the environment as urban residents. They suggest that this may be due to in-migrants who seem to be changing the character and composition of this region.

Van Liere and Dunlap (1980) noted that fewer studies had examined the impact of gender and environmental concern and there were not enough studies to review the impact of race. Although Dunlap and Van Liere found inconclusive evidence of a relationship between gender and environmental concern, more recent studies (Caron-Sheppard, 2000; Davidson & Freudenburg, 1996; Bord, & O'Connor, 1997; Blocker, & Eckberg, 1989; McStay & Dunlap, 1983) suggests that women are a bit more concerned about the environment than men. For example, Davidson and Freudenburg (1996) reviewed 85 studies on gender differences in concern with environmental risk and found that women were significantly more concerned than men about local hazards. They concluded that women were more concerned because they tend to care more about health and safety of family and community. In fact, Bord and O'Connor (1997) suggested that studies that employ questionnaire items and indicators that triggered risk perceptions (hazardous waste and global warning) in respondents will oftentimes find women to be

more concerned than men because women tend to have a greater perception of vulnerability to risk because of their concern for health and the personal well-being of family.

Other research (Gaard, 1993; Greenbaum, 1995) has suggested that gender differences are the result of the formation of masculine and feminine consciousness under patriarchy. This rationale assumes that in patriarchal cultures, gender is based on the principle of male dominance and detachment reasoning. Feminine identity is bound up with connection and an "ethic of care." This could suggest that women are more concerned than men about environmental issues.

Overall, a review of the literature reveals that there are significant relationships among age, education, political affiliation, residence and environmental concern. Thus it appears that younger, better educated, and politically liberal individuals are more environmentally concerned than their older, less educated, and politically conservative counterparts. However, a study by Jones et al. (1999) that examined rural/urban differences suggests that a gap between rural-urban concerns may be getting smaller.

Finally, review of the literature on race and environmental concern revealed inconsistent results. Earlier research suggests that blacks may not be as concerned about the environment as whites. Most recent research reveals that blacks are just as concerned about the environment and even more concerned about specific environmental problems (pollution) than whites (Mohai, 1998; Jones, 1998; Jones & Carter, 1994)

Research on Environmental Justice Research

National awareness of environmental justice emerged in 1982 as a result of grassroots efforts to address grievances of environmental discrimination in Warren County, North Carolina, to protest the discovery of a poly-chlorinated biphenyl (PCB) landfill in a predominately African American low-income community. Residents of this poor, rural community mobilized with civil rights groups, environmental groups, and religious leaders to fight the location of the landfill. Unfortunately, over 500 people were arrested in their efforts and they were unsuccessful in halting the landfill construction (Bullard, 1993; Taylor, 1993).

Environmental injustices in this community led to local residents and other activists alleging environmental racism. Reverend Benjamin Chavis defined environmental racism as:

> . . . racial discrimination in environmental policymaking, in the enforcement of regulations and laws, in targeting of communities of color for toxic waste disposal and siting of polluting industries, in the official sanctioning of the life-threatening presence of poisons and pollutants in communities of color, and racial discrimination in the history of excluding people of color from the mainstream environmental groups' decision-making boards, commissions, and regulatory bodies (Chavis, 1993:3).

This event also sparked the beginning of the environmental justice movement and lead to studies conducted by the U.S. Accounting Office in 1983 and the United Church of Christ in 1987 (Pinderhughes, 1996) that galvanized the movement and provided

empirical support for claims of environmental racism. The U.S. Accounting Office (1983) study examined the link between race and the location of hazardous waste sites in the United States and found race to be the strongest predictor of the location of hazardous waste sites in residential communities. It also found that three of every four off-site commercial hazardous waste landfills were located in predominately African American communities.

The United Church of Christ (UCC) study in 1987 found relationships among race, socio-economic status, and location of environmental hazards. It revealed that most of the 18,000 commercial industries that emit hazardous materials are located in areas that have a high percentage of communities of color. Over 15 million African Americans, eight million Hispanics, and half of all Asian/Pacific Islanders and Native Americans reside in communities with one or more abandoned or uncontrolled toxic waste sites.

These landmark studies subsequently led to many other studies in the 1990s (Bullard, 2000; 1994; 1990; Knickerbocker, 1998;Adeola, 1994 Pinderhughes, 1996; Brown, 1994; Cotton, 1994; Keeva, 1994; Burke, 1993;Bullard & Wright, 1993; Mohai & Bryant, 1992; Carroll, 1991) that provided empirical evidence of environmental racism. For example, Bullard (1990) examined environmental racism in Houston, Texas; the town of Institute, Virginia; Alsen, Louisiana and Emelle, Alabama. For example, the people of northeast Houston were protesting against a municipal landfill, in west Dallas a lead smelter, in Emelle, Alabama, a hazardous waste landfill and in Alsen, Louisiana a waste incinerator. Finally, in the town of Institute, Virginia, the community

was protesting against a chemical plant. He found evidence of conflicts, disparities, resultant growing militancy strategies, and tactics used by grassroots organizers to protest against environmental contaminants. A decade later, Bullard's Dumping in Dixie, 3rd Edition (2000), demonstrates that examples of environmental racism are widespread.

Lavell and Coyle (1992) examined 1,177 of the 1,206 Superfund waste sites and revealed that on average, it took 5.6 years from the time of toxic site discovery to be placed on the Superfund list. Their study found that abandoned hazardous waste sites located at or near communities of color took 20 percent longer to be placed on the national priority list than those in the majority population communities. A year later, a study by Mitchell (1993) supported the notion that governmental agencies penalize polluters of communities of color less severely than those in white communities. In addition, he charged that toxic cleanup programs took longer and were less thorough in communities of color than in whites communities.

Adeola (1994) examined race and proximity to environmental threats (landfills and petrochemical plants) in Baton Rouge, Louisiana and found that blacks were more likely to reside near hazardous waste facilities than other racial or ethnic groups. Brown (1994) reviewed 18 studies and found race to be strongly related to environmental exposure. Other research (Adeola, 2000;Bullard, 1999; Pinderhughes, 1996; Grossman, 1993; Bullard, 1994, 1993, 1992;Eichstaedt, 1994; Greenberg, 1993;Walsh, Warland & Smith, 1993;Mohai, & Bryant, 1992; Freudenburg & Pastor, 1992; Bailey, 1992; Unger, Wandersman & Hallman, 1992; Bullard,1992, 1990,1983; Kay, 1991;Costner, 1990;Edelstein, 1987) continue to show that communities of color suffer a greater impact

from environmental exposures because they are poorer, less organized, and less politically influential. For example, Pinderhughes' (1996) review of the literature on race and environmental quality revealed that race was still a strong factor in the distribution of environmental hazards in the United States. Her review of the literature revealed that communities of color continue to be disproportionately burdened with environment hazards and pollution problems than whites and this was attributed to institutional racism. She further argued that as a result, decisions about where to locate environmental stressors, and how and whether to clean them up are also mitigated by race. Therefore, those communities that are least resistive, less informed, less politically powerful, and dependent upon local job development are most at risk of environmental racism (Bullard, 1993,1983; Bullard & Feagin, 1991).

Perhaps the major debate in the literature has been the issue of what came first, the hazards or the people of color. Were the Locally Undersirable Land Uses (LULUs) sited in communities because of race, socio-economic status, and political weakness, or did the placement of sites in communities of color lower land values, thereby attracting other people of color and the poor? Were (LULUs) originally placed in communities with little reference to race and economic status and over time the racial composition of the area changed as a result of white flight, depressed housing prices and other social ills (Cutter, 1995; Been, 1993)?

Some scholars (Anderton, et. al, 1994; Been, 1993) challenged the environmental justice/racism claims, citing market dynamics and economic conditions as causal factors in placement of environmental hazards in communities of color. For

example, Anderton et al. (1994) examined census tracts to determine whether environmental racism exists. They compared treatment, storage, and disposal facility (TSDF) tracts to tracts without TSDF in all Standard Metropolitan Statistical Areas (SMSA), to determine whether TSDF sites were more likely to be located in or near neighborhoods that have a large proportion of blacks. They concluded that TSDFs were no more likely to be located in tracts with a higher percentage of blacks than other tracts.

Been's (1994) study examined prior study methodologies and found that census tracts were insufficient in determining the siting of (LULUs) prior to or after the migration of minority populations. The studies did not show cause and effect but rather the relationship between current distribution of LULUs and at-risk community demographics. Analysis of demographic data closest to the actual siting indicated that market dynamics rather than racist practices influence the migration of blacks and the poor to locate in communities where LULUs are sited.

Another argument against environmental racism claims is that most of the research lacks academic peer reviews. Friedman (1998) argued that the majority of the research on environmental racism had not been peer reviewed. His investigation emphasized that properly analyzed data showed that waste sites were just as likely to be located in white communities or in areas where people of color move after permits were granted. He further pointed out that despite the charges of racial genocide, cancer alleys, and assumed health effects, environmental racism has not been proven.

Although some researchers (Friedman, 1998; Anderton & et al., 1994; Been, 1994) have challenged the environmental racism claim, environmental justice advocates

continue to show that race and class are the determinating factors in the location of LULUs. In fact, the environmental justice movement has become the catalyst by which environmental racism claims have been addressed. Its main goal has been to ensure fair treatment and meaningful involvement of all people regardless of race, color, national origin or income with respect to the development, implementation, and enforcement of environmental laws, regulation and politics (EPA, 1998). Environmental justice was also greatly influenced by the First People of Color Environmental Leadership Summit and the Executive Order 12989.

The purpose of the First People of Color Leadership Summit in 1991was to develop a comprehensive and tangible national agenda of action that would reshape and redirect environmental policy-making in the United States (see Appendix E). President Clinton's signing of Executive Order 12898 in 1994 reinforced the Civil Rights Act of 1964, Title VI, prohibiting discriminatory practices in programs receiving federal funds. It called for improved methodologies for assessing health effects from multiple and cumulative exposure and collection of data on low-income and minority populations who may be disproportionately at risk of environmental degradation (Executive Order, 1994).

Over the last decade, researchers (Alier, 2001; Arp & Lloresn, 1999; Taylor, 1999, 1992; Novotny, 1995;Rosen, 1994, Doyle, 1994; Bruce, 1993; Bullard & Wright, 1992; Alston, 1992; Austin, 1991; Feagan & Capek, 1991; Ban & Kohl, 1991; Bullard, 1990; Mohai, 1990; Bullard & Wright, 1987; 1986; Taylor, 1989) continue to show that perceptions of bias and discrimination stimulate activism among people of color and have been the force driving them to protest against environmental racism. These grassroots

groups, the core of the environmental justice movement, have grown from merely a small number in the early 1980s to over 400 environmental justice groups today (Bullard, 2000). This growth has been attributed to the number and diversity of communities involved, geographic distribution, varied racial and ethic backgrounds, and different environmental problems addressed (Bryant & Mohai, 1992).

In summary, research on environmental justice has focused mainly on environmental racism. Ample research shows that race and income are the strongest predictors for placement of LULUs. However, race is found to be the strongest predictor of the distribution of environmental stressors. The environmental justice movement, which is made up of grassroots activism, has been the catalyst by which environmental injustices have been addressed. The bulk of the research on environmental justice has been to assess claims of environmental racism. Limited empirical research has examined perceptions of environmental problems among blacks to assess whether they perceive or not perceive these environmental problems caused by environmental discrimination.

Hypotheses and Theoretical Rationales

The following hypotheses of this study and the theoretical rationales used to support them were drawn from the reviews of the literatures and my own insights.

H1: Blacks are more concerned about the environment than whites.

H2: Blacks are more concerned about environmental health than whites.

H3: Blacks are more concerned about environmental justice than whites.

The above hypotheses are important to test because the review of the literature suggests

that most of the theories assume that blacks are less concerned than whites about the environment. The Environmental Deprivation/Differential Exposure rationale is really the only theoretical rationale that assumes blacks have greater concern about the environment because they are more likely to be exposed to more environmental hazards than whites (Mohai & Bryant, 1998; Lowe & Pinhey, 1982).

Mohai and Bryant (1998) pointed out that the Environmental Deprivation Differential Exposure hypothesis accounts for a unique "race" effect on environmental attitudes. It explains racial differences in environmental concern to the extent that environmental burdens fall disproportionately on the backs of Blacks.

Also, a high concentration of toxic wastes have been linked to various health problems (Adeola, 1995). For example, respiratory problems, memory loss or learning disabilities, breathing problems such as asthma and skin rashes are among the potential health hazards associated with exposure to high level of pollution and other toxins (Adeola, 1995,1994,1992) Therefore, the Environmental Deprivation/Differential Exposure hypothesis will be tested to measure racial differences in environmental concern.

H4: There is a positive relationship between environmental concern and perceptions of environmental health problems.

As pointed out earlier, many health problems have been attributed to environmental hazards (Griffin, 1998; Adeola, 1992; Brown, 1987). The extent to which residents are concerned about these specific health conditions have not been made clear in the literature nor has the possible link with environmental concerns. Indeed, most studies

have focused on general environmental concerns, perceptions, attitudes, knowledge and behavior and not on environmental health.

The Environmental Illness Paradigm is an emerging paradigm that tries to locate the origin of many illnesses to the environment. It is defined as a polysymtomatic disease in which people become highly sensitive to a broad range of chemical pollutants (Adeola, 1992, p. 24). Exposure to chemicals found in air, water, and food due to industrial and other polluting facilities may induce hypersensitivity and other forms of environmental illness. Specifically, I assume that those who have a greater concern for the environment will also believe that they suffer more health problems because of poor environmental conditions in their area. Consequently, this study seeks to examine the relationship between environmental concern and environmental health and offer insights into whether or not these two are related to each other.

H5: There is a positive relationship between environmental concern and environmental justice.

Studies on environmental justice have provided many objective accounts of the location of hazardous environmental impacts in black and the poor communities. But to our knowledge, no study has examined the relationship between attitudes toward the environment and the public perceptions of environmental injustice. Hence, we assume that those who have greater concern for the environment also believe that they are exposed to more practices and policies that create environmental injustice. Verifying and understanding this relationship would also help to better link these two major areas of research in environmental sociology .

H6: There is a positive relationship between perceptions of environmental health and perceptions about environmental justice.

Environmental justice offers insights into the conjuncture of social inequality and public health as well as a framework for policy discussions on the impact of discrimination on the environmental health of diverse communities (Frosch et. al, 2002). Unfortunately, a causal link to the presence of potentially hazardous polluting facilities with adverse health effects has been difficult to prove. The literature on environmental justice have made the claims of environmental discrimination as the cause for people of color and the poor being disproportionately exposed to environmental hazard and adverse health effects as a result of this exposure. However, limited research that has examined the relationship between environment justice and environmental health. This study will seek to examine this relationship.

The next set of hypotheses (H7-11) pertain only to blacks.

H7: Younger blacks are significantly more concerned about the environment than older blacks.

H8: More formally-educated blacks are significantly more concerned about the environment than less educated blacks.

H9: Liberal Democrats are more concerned about the environment than Conservative Republicans.

H10: Individuals living in households with higher incomes are equally concerned about the environment as individuals living in lower incomes.

H11: Females are significantly more concerned about the environment than males

Virtually all of the research on the social bases of concern has been conducted on the general population that is composed mostly of whites. Only one study Arp & Kenny, 1996) examined these variables (age, income, education, and gender) among the black population to see if blacks differ among themselves and whether the results are consistent with findings in the general population. The review of the literature on the social bases of environmental concern demonstrated that younger, better educated, and Democrats and women generally are more concerned about the environment than their respective counterparts. The literature also suggests that income is not consistently related to environmental concern (see, Chapter II for the specific rationales). This study adds to this limited research by assessing the association of age, education, income, political affiliation, and gender with environmental concern among blacks.

Chapter III: Methodology

Overview

The methodology and research design of the study is presented in this chapter. It includes an overview of the background and study area, in-depth interview design, questionnaire design, survey design and implementation, operationalization of variables, and the sampling and statistical procedures employed in the survey analysis

The primary objective of this study was to obtain information on the opinions and attitudes about environmental issues held by the residents living in or around the Red River community (RRC) of Clarksville, Tennessee. It used qualitative and quantitative methodologies to answer the questions outlined in Chapter I and the hypotheses presented in Chapter II. The study was conducted in two parts. The first part consisted of in-depth interviews, and the second part was a mail survey.

Background

The study began in the fall of 2002 after approval of the proposal by my dissertation committee. A draft interview protocol guide was developed and later refined by my dissertation committee members. Some of the information gained from these in-depth interviews were then used to refine the mail survey. The protocol guide and a draft of the mail survey was submitted along with a full proposal for a Human Subject Compliance Review by the University of Tennessee's Institutional Review Board and approved on March 11, 2003. Funding to assist the study was received from the Programs and Curriculum Committee Department of Sociology at the University of

Tennessee and from personal donations by friends of the primary investigator.

The Red River neighborhood is located in Clarksville, Tennessee and it was physically defined as all of the houses, schools, buildings, businesses, parks, rivers, streams, etc. located on, or near, Kraft Street, College Street, and Riverside Drive (see Appendix I: P. 2). Other neighborhoods surrounding the RRC with similar socio-demographic characteristics (low education, low income, younger, high minority population) were also included in the study to add to the limited number of potential respondents that could be obtained from the RRC. Residents of RRC and surrounding communities have been struggling for some time to improve their quality of life in the face of significant social and environmental problems. This investigation examined concern for the environment, perceptions of environmental health and environmental justice problems among these residents.

In-Depth Interviews

The qualitative research methodology part of the study was primarily based on principles set forth in The Practice Of Social Research (Babbie, 1998), Social Research Methods: Qualitative and Quantitative Approaches (Neuman, 1997), Research Design: Qualitative & Quantitative Approaches (Creswell, 1994), and Basic Interviewing Skills (Gorden, 1992). The purpose of the in-depth interviews was to facilitate exploration and gain background information about history, culture and challenges facing the Red River neighborhood from residents who have lived in the area for at least 10 years. This information was then used to help in the design and implementation of the subsequent

mail survey.

The specific objectives of the in-depth semi-structured interviews were:

- To gain an independent understanding of residents perception of the neighborhood.
- To identify residents' concern about various environmental problems facing their neighborhood.
- To identify residents' perceptions about environmental injustice and discrimination.
- To identify other pertinent information residents would like to share about the neighborhood; and
- To have them evaluate a draft of the mail survey questionnaire.

The qualitative part of this study employed non-probability techniques (snowball sampling) to select the participants to interview. With snowball sampling, interviewees were selected by contacting a small, initial group of chosen residents and asking them to provide further contacts (Neuman, 1997, p.207). This method ensured that individuals interested in environmental issues in the neighborhood would be chosen to participate.

Twenty residents of the Red River neighborhood were selected to participate in the in-depth interviews. Key informants were asked to provide names and contact information for individuals whom they believed could provide information for this study. Participants' contact information was entered into a database in Microsoft Word and kept on a laptop computer. The twenty participants were contacted by phone to arrange the in-depth interviews. Dates and times for each interview were scheduled during the initial

phone interview. All twenty of the participants contacted by phone agreed to be interviewed.

These interviews began on March 11, 2003 and ended on April l, 2003. As indicated previously, an interview protocol guide (see Appendix G) was used during the interviews which included fourteen open-ended questions that participants were asked to answer in an effort to discover as much information as possible about their concerns about social and environmental issues living in their neighborhood. Participants were free to answer each question in any way they desired. Additionally, demographic information about the time, places, and sites of the interviews, plus the gender and race of each participant were noted on the laptop computer.

The interviews were recorded on audiotapes as well as by notes taken on a laptop computer. The majority of the in-depth interviews took place in the participants' homes, at times most appropriate for each interviewee. On several occasions, interviews were conducted at other sites, such as an office or a diner. The interviewees gave me permission to use the recording devices during the interviews. They were also assured that confidentiality would be maintained throughout the entire research process. I obtained signed informed consents from each participant (see Appendix H).

At the beginning of each interview, participants were provided with the following information: introductory information about me and the purpose of my research, the objectives of the in-depth interviews and their rights, and acknowledgment of consent. After the introduction, the interview began with the an opening statement like "I appreciate you doing this interview with me today on assessing environmental concern

and justice in Clarksville, Tennessee." This opening statement would then be followed by a question, such as " Can you share with me how long have you lived in the Red River neighborhood."

During each interview, I listened carefully to the kind of responses the subjects supplied to ensure that the interviews provided the kind of findings needed. As the interviews progressed some additional probing questions were asked to get participants to answer the primary survey questions. Also, process notes were kept on a copy of the Protocol guide on the laptop computer during each interview. Again, these notes were used to describe behavioral observations and any kind of nonverbal communication. My feelings about and reactions to the interviewees' nonverbal cues were recorded and included as part of the findings. The interviews with each participant lasted approximately 60-120 minutes. After daily interviews, the investigator transcribed the collected raw data into detailed narratives on computer disks for further analysis and inclusion in this dissertation.

Data reduction and analysis began immediately after each interview. First, I imposed order on the data and then set out to follow the coding data process recommended in Neuman's text, Social Research Methods: Qualitative and Quantitative Approaches (1997, p 422-424). During the data reduction process, I listened to the research tapes and then transcribed the data from each interview categorizing the data by appropriate themes and initial codes. Next I reviewed and examined the initial codes of the data. During this process I asked relevant questions of the data and combined several similar concepts into one general one. For example, several themes(i.e., friendly, lovely,

nice, fine, interesting, wonderful, ideal, good, great, fairly well, very well, difficult, hard, alright, successful) came out of the data about respondents' impressions of their quality of life living in the Red River community. I combined several closely related concepts into one or more general ones. This process continued until major themes was derived from the collection of raw data. This coding step reinforced the linkages between evidence and concepts. The last coding step involved examining the themes found in the data and finally making comparisons and contrasts after the data collection process was complete. This step enabled me to understand some of the problems/ conflicts these residents had about their experiences in the Red River neighborhood.

In summary, the qualitative techniques allowed me to reach my conclusions by using a set of rules. Like the normal curve, these techniques allowed me to evaluate how widespread the patterns were in the data. Of course, since a representative sample is not used in qualitative work, I could not estimate parameters. Despite this, the richness of the data allowed for the discovery of patterns. This qualitative aspect of the study also enhanced my understanding in descriptive detail how people perceive, think, and behave regarding their experiences from their individual perspectives.

Mail Survey

A mail survey was used to test the 11 hypotheses presented in the "Hypotheses and Theoretical Rationales" section. The final survey instrument was developed after extensive pre-testing during the in-depth interviews and through multiple revisions and evaluations. Pre-testing of the draft questionnaire was used to determined the strengths

and weaknesses of the format of the survey questions. Participants completed a draft of the mail survey and shared their opinions as to the question variations, meaning, task difficulty, and his or her overall impressions of the instrument. A few participants expressed concerns about the length of the questionnaire itself as well as the length of time it took them to complete the draft questionnaire. The overall length of the questionnaire was subsequently reduced from eighteen pages to twelve pages based on these comments.

Other modifications of the survey included rewording some questions and combining similar questions into scales. In addition, design changes to the cover page were made, such as changing the title of the survey, creating a front page cover, and adding maps of the Red River community and the city of Clarksville to page two of the survey instrument (see Appendix I). These changes were made to the questionnaire in an attempt to improve the likelihood potential respondents opening the questionnaire and returning it. All together there were five revisions made prior to the final version of the questionnaire. All were reviewed by Dr. Robert E. Jones, Associate Professor of Sociology and myself.

The final version of the questionnaire was printed in booklet form in mid-May 2003, following the instructions set forth by Salant & Dillman (1996) and Dillman (2000). It contained 33 closed-ended questions (see Appendix I). The first set of questions asked residents to identify their location in the neighborhood of study and the number of years lived there. (Questions 1-4). The questionnaire also included several questions that measured how concerned residents were about different aspects of the

environment in their neighborhood (Questions 11-13). Several indicators in an index measured concerns about perceived health risks from environmental problems (Question 14), followed by another 11-items index that measured opinions of environmental discrimination (Questions 17). Also, to assess locality to pollutants, several questions measured residents' proximity to polluting facilities and polluted rivers (Questions 23-26). Finally the remaining seven questions focused on socio-demographic characteristics of respondents.

The major objectives of the survey for this study were to determine the following:

- The social demographic characteristics of the respondents.
- Public concern about environmental problems in their neighborhood
- Public perceptions about health problems associated with environmental problems in the neighborhood.
- Public perceptions of environmental justice.

Survey Implementation Procedures

The mail survey was administered and implemented during a six week period beginning in May, 2003 using a four-wave survey approach. A total of one thousand (1000) surveys were mailed. Implementation began with the mailing of an introductory letter to all the households in the Red River community and to a randomized sample of residents living in or around the Red River community (RRC).

The introductory letter was mailed on May 23, 2003. It detailed the study's purpose and explained how and why the recipient had been selected to receive a future

mail survey. The residents in the sample then received a second mailing on May 28, 2003 which included a personalized cover letter, a questionnaire, and a pre-stamped business-size envelope. Then on June 3, 2003, a postcard follow-up was sent to all the individuals of the sample. The postcard thanked those who had responded and encouraged those who had not to please fill it out and return it. A final mailing on June 16, 2003 was sent to target non-respondents and provided a monetary incentive (a $50 check to be given to two randomly selected non-respondents who completed and returned the questionnaire). This mailing included a second survey questionnaire, another stamped envelope, and a follow-up letter requesting respondents to complete and return the mail survey if they had not already done so The high number of contacts with the population were made to increase the chances of getting a higher than average response rate for this type of population (low education, low income, young, and high minority) and to decease sampling error.

All survey materials returned by mail were received at Austin Peay State University's Post Office and placed in a designated mailbox for this study. The response rates were tracked using the Statistical Package for the Social Sciences, or SPSS 9.0. Returned questionnaires were reviewed and coded , then the responses were entered into a digital file constructed using SPSS (9.0) as well. After data were coded into SPSS, the data were cleaned and examined for data errors after every tenth case entered into SPSS digital data file from June 4 through June 30, 2003.

Operationalizing Variables

This section describes how the variables used to test the hypotheses were designed and measured in the mail survey.

Environmental Concern There were three separate, but substantively related, indicators of public concern for environmental problems (i.e., environmental concern). The "EC Index" measured public concern for *specific* environmental problems in the neighborhood. "EC-II" gauged public concern for the quality of *overall* environment in the neighborhood and "EC-III" examined public concern about the *seriousness* of environmental problems in the neighborhood.

Environmental Concern Index A fourteen-item environmental concern index **EC Index**) composed of Likert-type items (very concerned-very unconcerned) was developed (see Appendix I: Question 11). Items included statements related to public concerns about potential environmental problems in their neighborhood such as the quality of drinking water, flooding and water damage, lead and waste hazards, litter, pest infestation, dilapidated and abandoned houses, etc. Each item was recoded to reflect the degree to which respondents were more concerned about these specific local environmental problems.

Index scores ranged from 14 to 70 with higher scores representing *greater concern about environmental problems in the neighborhood*. A reliability test (Cronbach's Alpha) was performed to assess the consistency of the 14 item, **EC Index** and it yielded a very high alpha reliability of .96. Consequently, it would be safe to

assume the 14 item-index is a highly accurate and reproducible scale for the measurement of this indicator of environmental concern.

Environmental Concern II A single-item indicator of environmental concern composed of Likert-type items (very concerned-very unconcerned) was used to assess public concern for the overall environment in their neighborhood. The responses were recoded to reflect the degree to which they were more concerned about the quality of the overall environment in their neighborhood. Thus, higher scores on **EC-II** reflect *greater* environmental concern.

Environmental Concern III This single-item Likert-type asked respondents about the *seriousness* (very serious-not serious at all) of environmental problems in their neighborhood. It was recoded to reflect the degree to which respondents thought local environmental problems were serious. Higher scores on **EC-III** thus reflect *greater concern for the environment.*

Environmental Health A nine-item environmental health index (**EH Index**) composed of Likert-type items was developed (see Appendix I: Question 14). Items included statements related to public perceptions about certain side effects associated with environmental problems. Respondents were asked to provide subjective estimates (very likely-very unlikely) about disorders and illnesses that they, or any member of their current household, had experienced as a result of poor environmental conditions in their neighborhood. Some of these side effects were stress or emotional problems, stomach or body aches, headaches, nervous disorders, loss of appetite, significant weight loss or gain,

skin rashes or skin problems, memory loss or learning disabilities, breathing problems, asthma and allergies.

Each item was recoded to reflect the degree to which respondents thought there was a greater likelihood that these side effects were associated with environmental conditions in the neighborhood. Scores on the **EH Index** ranged from 9 to 45 with higher scores reflecting a *greater likelihood* that the person believes they have experienced *health problems* from being exposed to environmental contaminants in their neighborhood.

A reliability test (Cronbach's Alpha) was performed to assess the consistency of the nine- item EH Index and it yielded a very high alpha reliability of .95. Thus, it should be a highly accurate and reproducible scale for the measurement of this indicator of environmental health.

Environmental Justice An 11-item index (**EJ Index**) was used to gauge public perceptions about environmental justice and equity. Respondents were asked their views about local and county officials' attempts to improve environmental conditions in their neighborhood (see Appendix I: Q17 a-k). Respondents were asked the level to which they agree or disagree that local agencies and officials had: asked the community for its input, informed them about the problems, held meetings to address them, enforced environmental laws and regulations in their neighborhood, exposed them to more than their fair share of pollution and degradation, addressed the environmental concerns of minorities, and etc.

Each items employed Likert-type items (strongly agree-strongly disagree). Those who responded with a "don't know" were recoded into the middle category ("neither agree or disagree"). Scores on the EJ Index ranged from 11 to 55 with higher ones reflecting a greater likelihood that the person thinks local public agencies and officials have **not** tried to improve environmental conditions in their neighborhood. Most of the items were based on democratic and equitable practices that would provide citizens with access to information, opportunity to participate in the decision-making process, and a fair and equitable distribution of the cost of environmental degradation and the benefits of environmental protection. In this sense, higher scores on **EJ Index**, are assumed to reflect a *greater likelihood* that the residents believe local officials and agencies have *unfairly* subjected them to a *range of environmental injustices.* A reliability test (Cronbach's Alpha) performed to assess the consistency of the 11-item **EJ Index** yielded a very high alpha reliability of .86.

Race was obtained by asking the following question (see Appendix I: Q 31): What race or ethnicity do you identify with the most? (see Appendix I : Q 31). It was originally coded, 1= African American/Black, 2= Non-Hispanic White, 3 = Hispanic or Latino, 4 = Native American, 5 = Asian and 6 = Other. It was subsequently, recoded into a dummy variable so that only Blacks (0) and Non-Hispanic Whites (1) were included in all of the analyses.

Social Bases of Environmental Concern among Blacks Several key socio-demographic variables were used to determine the social bases of environmental concern among Blacks.

Age was based on the year each respondent said they were born subtracted from the year the mail survey was administered (2003). The scores ranged from 26 to 96 years of age (see Appendix I: Question 28). The mean and the median year of age for blacks were both 53.

Education Respondents were asked which description *best* represented their highest level of formal education based on the following scale: 1 = Less than High School, 2 = Some High School, 3 = High School Diploma or GED, 4 = Some College, 5 = College Degree, and 6 = More than a College Degree---i.e., some graduate work or a graduate degree (see Appendix I: Question 30). The majority of blacks had not attended college (53%), seven percent were college graduates, and having high school diploma or GED was the median response (36%) .

Household Income The questionnaire inquired about each household's total annual income before taxes in 2002. The ranges were 1 = Less than $14,999, 2 = $15,000 - $24,999, 3 = $25,000- $34,999, 4 = $35,000 - $49,000, 5 = $50,000 - $74,999, 6 = $75,999-$100,000 and 8 = Don't know (see Appendix I: Question 29). "Don't' Knows" were subsequently recoded into missing values and excluded from subsequent analyses. The average household income among Blacks was less than $25,000 and one-fifth of them made less than $15,000.

Political Affiliation This question in the questionnaire asked repondents to identify their political affiliation. The ranges were 1 = Liberal Democrat, 2 = Moderate Democrat, 3 = Independent, 4 = Moderate Republican and 5 = Conservative Republican. (see Appendix I: Question 33). Most Black respondents (85%) are Democrats, some (13%) are Independent, and few are Republican (2%).

Gender A single-item asked respondents their gender (1=female, and 2= males, see Appendix I: Question 27). The majority of the black respondents were female (56%).

Statistical Procedures

The above variables were used to test the hypotheses. Independent-Sample T Test (see, Green et. al., 2000, p.149) was used to test for significant mean differences between Blacks and Whites on indicators of environmental concern (H1), health (H2) and justice (H3). Bivariate correlation analyses were used to test for a relationships between these measures (H4-H6) and a stepwise regression analysis was used to predict environmental concern (EC3) from indicators of environmental health and justice (H7).

Race was recoded into a dummy variable in which zero represented blacks and one represented whites. All other respondents (37 or 15%) were excluded from all of the subsequent analyses by placing their responses into missing values; leaving a total of 209 respondents in the final sample.

The identification of social bases of environmental concern among blacks— i.e., the social demographic characteristics of black concern (see, H7-H10) was based on bivariate correlation analyses for age, education, household income, and political

affiliation. An Independent Samples T test was performed to test for mean differences between black females and black males (H11).

Sample and Sampling Procedures

The study's sample was obtained from Survey Sampling Inc. of Fairfield, CT. The study consisted of two samples from Clarksville, Tennessee. The assumptions used to calculate the sample size were based on estimates of the percentage of eligible respondents, response rates, and usable questionnaires. A total of one thousand questionnaires were mailed out. Four hundred and three (403) or 40.3% of the sample were sent to listed households in the Red River community. Base on U. S. Census figures and estimates supplied by SSI, this would mean that approximately 48% of the total estimated households (N= 839) located in the RRC (U. S. Census Tract 1008) were sent a mail survey. However, many of the estimated households (436 or 51%) were actually found to be unlisted (i.e. no mailing address with corresponding name, or vacant) and therefore undeliverable. Thus, the 403 survey sent out represents 100% of the listed households in the RRC.

This presented a challenge to our sampling and to our study objectives since we already knew that low income, low education, younger and high minority subpopulations are more transient and thus much harder to access, and have lower response rates than their counterparts. For example, I needed to have enough blacks in the study that I could make valid comparisons with whites and subgroups within the black population. Based on Census data and SSI 2002 projections, I estimated that 49% of the listed households

(N = 403) in the RRC were black, 46% were Non-Hispanic White, and 6% were "Other." Given, the historical low response rates from poorer, less educated areas such as the RRC, I expected that between 20% to 30% of the 403 surveys sent out to households in the RRC would be returned. I also expected that about 10-15% of the surveys would be undeliverable and returned (approx. 50) because of the higher-than-average rates of transiency in this community.

Based on these figures I estimated that I would only have about 40 completed and returned surveys from blacks and 35 from whites in my final sample. This would not be enough to provide me with the type of analyses and comparisons needed for the study. Consequently, I included households living around the RRC to increase the size of the sample. Households in nearby Census tracts were chosen based on their relative similarity in racial composition and proximity to the RRC Census tract (1008). Three were selected (1001, 1007, and 1009) based on these conditions.

Based on Census 2000 data and 2002 population projections provided by SSI, it was estimated that 38% of these households were black, 55% were Non-Hispanic White and 7% were "Other." These figures were fairly similar to the ones obtained from estimates of the RRC (49%, 46%, 6% respectively).

A systematic random sampling method was employed by selecting one household on a random basis and choosing additional units at evenly spaced intervals, using a list of addresses, until the desired number of 1000 household units were obtained. A total of 403 listed households were obtained from SSI from the Red River Community. A total of 597 listed household located near the RRC was obtained from SSI. Each household was

subsequently sent a mail survey. Thus, 40.3% (403) of the initial sample of 1,000 targeted households represented listed households located in the RRC and 59.7% (597) represented similar types of households living near the RRC. These estimates closely matched the actual number of completed questionnaires obtained from the RRC (39%) and from the surrounding Census Tracts (61%).

It was also estimated that about 42 percent of the completed questionnaires would be from Blacks, 51 percent would be from Non-Hispanic Whites, and the rest (7%) would come from other groups (Native Americans, Asians, etc). These estimates proved to be quite accurate since the actual figures were 39 percent, 50 percent and 11 percent respectively. Overall, it is apparent that the final sample of respondents closely matched the racial composition of the population living in and surrounding the RRC. However, the final sample tended to have a slightly larger proportion of older residents–a common occurrence in most mail surveys. Generally, this would make the results represent slightly less pro-environmental attitudes and make the study estimates even more conservative in nature (Marshall, 2001).

Those eligible to participate in the mail survey are adults 18 years of age or older and living in either the RRC or in nearby Census Tracts (1001, 1007 or 1009). The statistics for the mail survey are presented in **Table 3** below. Seventy-nine (79) potential respondents were eliminated from the sample because they were deceased or ineligible. Of the remaining questionnaires received by potential respondents, 670 were not returned and 4 blank or incomplete were received

The 247 completed and returned questionnaires (Blacks, 38%; Non-Hispanic

Table 3.0: Mail Survey Sampling Statistics

Number	Sampling Results	Percent
1000	Questionnaires mailed	100.0
79	Non-deliverable, Deceased	7.9
921	Questionnaires received by potential respondents	100.0
674	Unreturned or incomplete questionnaires	67.4
247	Questionnaires completed and returned	26.8

Whites, 49%; other; 11%; no answer, 2%) represent a response rate of approximately 27 percent. Although this rate is low if it was compared to response rates usually expected from the general public (35-50 percent), it does represent a higher-than-average response rate (10-20 %) for this type of population (lowly educated, low income, young, and high minority).

Based on a total of 3,068 estimated households living in the study area, it was estimated that the sampling error for the final sample was quite low (+/- 6.3%). This means that 95 out of 100 times a sample (i.e., the confidence level) of this size (247) is drawn, the actual population score would be +/- 6.3 percentage points from the sample mean.

Summary-Research Methodology

This study tested several hypotheses assessing environmental concern, health and justice neighborhoods located in or around the Red River community of Clarksville, Tennessee. An exploratory investigation of in-depth interviews was conducted with 20

residents of the Red River community to ascertain their views about social and environmental issues facing their community.

Results of the in-depth interviews were later used to help design and implement the mail survey. The response rate for the mail survey was a respectable 27 percent. The results of the mail survey are based on completed questionnaires obtained only from 94 Black (43.5%) and 122 White (56.5%) adult residents living in or around the RRC. Independent Samples T tests, bivariate correlation analyses and regression analysis were used to test the hypotheses examined in the study. The results of these analyses are presented in the next chapter.

Chapter IV: Findings and Results

This chapter will discuss the findings of the qualitative in-depth interviews and the quantitative results of the mail survey.

Qualitative Findings: In-Depth Interviews

The qualitative in-depth interviews included detailed descriptions of the twenty participants' responses to each research question. Those interviewed for the study were 8 black males and 12 black females from the Red River community. The results of the qualitative interviews were later used to refine the mail survey instrument.

These in-depth interviews provided me with a rich source of data. As interviewees (participants) shared their experiences, data emerged in response to the research questions that served to support the overall framework of this study. The twenty interviews began on March 11, 2003 and ended on April 1, 2003. Interviews with participants lasted between 60 to 120 minutes per interviewee. As stated earlier, most of the interviewing was conducted in the home of the residents on the day and time most convenient for them.

The interviewees were selected using snowball sampling and the results are presented in narrative format. The narratives expressed the participants impressions, perceptions and understanding of how they felt about their neighborhood. When discussing their responses to the research questions in this study, I will refer to the participants by pseudonyms, in an effort to preserve their confidentiality. Each of the participants was asked open-ended questions and was free to answer as he/she desired.

The research questions (see Appendix G) elicited many themes which were reflected in the in-depth interviews; particularly, that the participants considered the Red River community as:

(a) a good place to live;

(b) a low income community;

(c) mainly a black community;

(d) subject to drug problems;

(e) subject to pollution problems.

As noted earlier, I took reflective notes on a lap-top computer during each interview, and some of these notes were integrated into the reported findings. A total of 135 pages of data were analyzed from the interviews. Results of the data are presented below.

Length of Residency

Each participant was asked how long he/she had lived in the community and to describe it to me. All twenty of the participants interviewed stated that they had lived in the Red River community for a long period of time, ranging from 10 to over 86 years. As stated by Mrs. Sue Davis (March 14, 2003), " I have lived in the RRC for 67 years and love it." Mr. Charles Smith (March 17, 2002) commented, that he had lived in the community for 87 years.

Living in the Red River Community

The majority (11) of the research participants described RR neighborhood as a good, nice place to live. Mrs. Stephanie Young (March 13, 2003) added:

> Well it has been successful as far as I know, I haven't had any problems with anyone. We stay to ourselves mostly, everybody's nice. Got some neighbors down there that are Christians and people back there I see and speak to them. It has been good.

The non-verbal cues from Mrs. Stephanie Young, appeared to display happiness about living in the neighborhood. The participant smiled a lot and got excited while talking about the RR area. Mrs. Sally May (March 13, 2003) also shared similar feelings:

> I think my life has been very good living in this community. When we first moved here everybody owned their homes. Most of them have died out and now we have mostly renters. We have a lot of renters who do not keep up like you did when you have your own home. Life has been pretty good here.

My impression from Mrs. May's comments was that she really saw that the neighborhood had changed over time. Several (6) research participants described life in the Red River neighborhood as hard and difficult.

Mr. Dick Wilson (March 11, 2003) stated:

> Well, it's been very interesting. The old folks say up and down and all around. It was a segregated neighborhood. It was depleted for about 500 families about 35 years ago due to expansion of Austin Peay State University and they were displaced.

Mrs.Sue Davis (March 14, 2003) also shared similar feelings:

> I kind of had it hard over here. My aunt worked, we had 9 to 10 grocery stores and could go to buy a nickel worth of cheese and bologna. We made it. We didn't have much. It was very difficult.

Mrs.Sue Davis's non-verbal communication of a sad look on her face as she talked indicated that life in the Red River community had been hard for her and her family.

Boundaries of the Red River Community

Participants were asked to indicate where they believed the boundaries of the RRC were, and if there were areas that were once considered part of the community that no longer existed. The majority of those interviewed described the Red River community as including Red River Street, Kraft Street, Shearon Street, Poston Street, Shacker Drive, Frosty Morn Drive, Roman, College Street, Arctic Street, where the Lincoln Homes Housing Project is located and the area behind Austin Peay State University (see map in Appendix F).

A few described it a little differently from the majority of the participants. Mrs. Donna Adams (March 15, 2003) described the Red River community as being, "down back behind the police station and up here on Farris Drive." Another variant description of Red River community was given by Mrs.Juanita Edwards (April 1, 2003), who described the boundaries of the Red River community as beginning " Where the old house is up on the hill and where the industry behind APSU" is located. These participants appeared to be referring to the areas mentioned by other participants. They just didn't know the names to use them as

boundaries of the RRC

When responding to the question about whether there were areas that were once but no longer considered part of the Red River community, the majority (12) of the participants said "Yes," citing the expansion of Austin Peay State University as the primary reason. For example, Mrs.Sally May (March 13, 2003) claimed, " They bought the houses and built Austin Peay State University to make it larger and everything. I didn't like it, but what can you do about it?" This was further described by Mrs.Donna Adams (March 15, 2003),

> Everything was torn down. APSU bought em out. Everything----- all those houses. They said that APSU is going to buy these out, but I am not going to sell nor do I believe it. How is APSU going to buy this property, Lincoln Homes Housing Project when it is federal property?

Description of the Community

Participants were asked to describe the Red River community to me during their interviews. Several different experiences were shared. Six of the participants described the community as needing improvement.

As Mr. Charles Smith (March 17, 2003) bluntly said, " It is a city dump that needs improvement." Mr. Joe Mann (March 13, 2003) gave a similar response: " It needs to be cleaned up some. I usually don't go around that way because so much glass and trash in the streets. I usually go out that way and come in that way." Mr. Vincent Haines (March 20, 2003) described the community as consisting of " a lot of run down houses, vacant lots that needs to be cleaned- up."

I noticed that while making these statements Mr. Haines conveyed non-verbal communications of indicating a sad face, giving me the impression that he was very unhappy with the physical environment of the community.

On the other hand, several (7) other participants described the Red River community as a low income community with pollution and drug problems. Mr. Don Johnson (March 20,2003) said,

> Most of the community is a low-income area. It has been overlooked by the state and city. We are no different than any other area. We have had good people that come out of this neighborhood.

Because Mr. Don Johnson stood up and shouted while responding to this question, it was my impression that he felt bad that the community was looked down on by the rest of society in Clarksville because of the community's racial and social class makeup.

Mr. Buddy Edwards (March 18, 2003) added that the community was, "a large area with a mass of destruction and pollution, an area that is hard for many people to live in, and that is because of drugs."

On the other hand, a few participants described the Red River community as offering them a better quality of life for them. As Mrs. Donna Adams (March 13, 2003) claimed,

> I like it over here, I had nowhere else to go. They will fix up the houses if something in Lincoln Homes breaks. In the 1970s I didn't have anywhere to live, I had two little rooms, but my heater in my house couldn't keep me warm. My boss I worked for at the time told me I would freeze to death if I didn't move. She helped me get into Lincoln Homes.

From this statement, I was led to believe that previous living conditions for Mrs.

Adams were much worse than the current conditions in the Red River community. Furthermore, I deduced that this participant viewed moving to the Red River community as an improvement in her quality of life rather than a lateral move from one poor area to another.

Finally, two other participants described the Red River community as a better place to live and a place that is growing. Mrs. Sue Davis (March 14, 2003) stated, "I see it growing, people are fixing up their homes, and the community looks better now. Nothing is wrong."

Reasons for Moving to the RRC

Participants were asked if the Red River community was the only place they had lived in Clarksville and if not, where else had they lived and for how long? They were all asked to divulge the reason they moved to the Red River community. The majority (11) of the participants indicated that they had lived in other areas in Clarksville. Mr. Dick Wilson (March 11, 2003) claimed to have formerly lived in Brandon Hill about ten to twelve blocks from the Red River area. Mr. Dick further explained:

> I lived in a house there that was purchased by my grandmother. It was built by my grandfather. They were both born into slavery.

He indicated he moved to the Red River community for family reasons explaining:

> I moved back and built a house for my mother in the area because she had been living in a shotgun house that was dilapidated and I felt sorry for her and had her a house built in the Red River community. Unfortunately, Austin Peay

> State University took it from her and she had to move, so I built her another house in this area that she loved.

Five participants had lived in the Red River community all their lives. Other reasons provided by participants explaining their choices to live in the Red River community included: having family in the area, being able to purchase property in the area at the time, and seeking a better quality of life. Mrs. Donna Adams (March 15, 2003) said, " They wouldn't fix the houses where we use to live so we had to move. People just do what they have to do."

The Black Community in Clarksville

The twenty participants were asked if they thought the Red River community was a predominately black community. Most (16) of the participants interviewed stated that the Red River community had always existed as a predominantly black community. Mrs. Sally May (March 13, 2003) said,

> It is the way it has always been--- blacks have lived here. I think they were allowed to move many years ago and they couldn't live anywhere else. The white man wouldn't allow them to move anywhere else for a long time.

Mrs. Sally May's response is similar to that of Mr. Charles Smith (March 17,2003) who explained,

> The Red River community has always consisted of blacks because in past years further down from the Red River was called Black Bottom and that's where blacks lived. The houses were built on 8 to 10 feet telephone poles because of flooding. This is where we come from and it is hard for people to imagine.

Only a few stated that the Red River community was an integrated rather than a predominantly black community. During one particularly interesting interview, the wife of Mr. Leonard Bryant (March 16, 2003), who was not being interviewed, interrupted the interview to declare that the community was integrated; to which the husband disagreed, responding that "the Red River community was and always had been a black community." My feeling was that this participant was surprised by the answer from his spouse, for he voiced quite loudly that the community was and still is black and not white in any way.

Problems in the Red River Community

Participants were asked if they were aware of any problems in the Red River community; and if there were, to describe the reasons for these problems. All of the research participants interviewed indicated that they were aware of problems existing in the Red River community, and each research participant identified at least two problems. Three major patterns seemed to appear over and over again in conversations with participants: drugs, community clean up and pollution problems. The majority (15) of the participants stated the sale and use of illegal drugs) as the most critical major problem in the community, followed by community improvement needs (clean up, sidewalks, trash/litter, fixing up houses) and finally pollution issues (dumps, slaughterhouse, smell, drinking water, pollution in the Red River). For example, Mrs. Mary Smith (March 11, 2003) stated:

> We have a drug problem and that has been a stigma in the neighborhood; and also in times past, it was a custom for the Red River community to have waste dumps as well as a slaughter house that was relocated to our neighborhood.

Significantly, Mr. Charles Smith (March 17, 2003) also indicated,

> There was a big dumping in the community which caused a lot of pollution. Not only has Red River community been a dumping ground but the Red River has caused problems such as pollution and wastes.

While interviewing Mr. Smith, I felt as if he were inferring that he had suffered racial discrimination but could not bring himself to actually say those words. Also, I noticed that Mr. Smith had a very serious expression on his face while talking about this issue. The response of Mr. Don Johnson (March 20,2003) was very similar to Mr. Charles Smith's, in that Mr. Don Johnson claimed, "It seems as if we are like outcasts," adding, "We are not recognized, really."

Many participants also mentioned that the community was not receiving adequate police support regarding illegal drug issues. As Mrs. Jo Ann Bates (March 25, 2003) said:

> We report drug-selling, and the police will come and pick the guys up, and in a few hours they are back out there selling dope. I have even called and the police will ask me if the guys are black or white, and if I say black the police don't come over here.

When asked to describe the reasons that these problems exist in the community, several (7) of the research participants cited discrimination. According to Mrs. Juanita Edwards (April 1,2003), "We are overlooked and it is because of racism.

The city has given basically nothing to help us. They don't care." Also, Mr. Frank Jones (March 15, 2003) voiced that " they don't care, about our community." Eight participants stressed that low income was a dominant reason that these problems occur. Mr. Allen Johnson (March 25, 2003) suggested:

> Because we are a low income area, the official figures think that because we are black and poor we don't care and don't have the need as other areas do. We get neglected because of that.

Interesting, though, two research participants stated that community problems were due to lack of activism by residents themselves. Three participants said that the lack of jobs contributed to these problems in the Red River community. Finally, a few participants voiced their concerns about the need for the Red River to be cleaned up because of the bad smell. Mr. Don Johnson (March 2003) clearly stated, " You can't hardly go through here because it smells so bad."

Effects of Social and Environmental Problems

The majority (14) of the twenty research participants interviewed explained how the problems in the Red River community affected their everyday lives from being afraid daily to affecting their health to making them feel worthless. Seven participants admitted they felt afraid all the time as a result of the problems in their community.

Consider the significant response Mrs. Jo Ann Bates (March 25, 2003) gave in response to this question:

> Oh, honey don't ask me. You can't sleep at night for fear of the phone ringing that somebody done got killed. Its just the same things over and

over again. It is horrible. I thought I would get used to it but I can't.

One participant, Mrs. Juanita Edwards (April 1, 2003) admitted, "They affect me because I feel that, if you are black and poor and from this area you are doomed for failure." Mrs. Edwards' statement gave me the impression that the residents of this community do suffer problems due to unfair assumptions made according to race, class and geographic location (neighborhood). From such interviews, I believed that nothing was being done to help the members of this community. Moreover, I believed that many of these residents have been made to feel that they could not succeed because of the color of their skin and the place in which they lived.

These problems also appeared to affect economic growth and well-being in the community, too. Three research participants claimed the drug problem affected their businesses. One such participant, Mrs. Stephanie Young (March 18, 2003) said, " I have lost a lot of customers. One customer's husband told me he did not want his wife in this area ." From the seriousness of the tone of Mrs. Young's voice and her facial expressions, I concluded that she was very unhappy about the drug situation in the Red River community. Other research participants (3) complained that these problems affected their health. For example, Mrs. Mary Smith (March 11, 2003) expressed concern about the "bad smell in the air," and the constant presence of biting mosquitoes. She suggested that the environment in the community made her asthma worse. Finally, a couple of the participants claimed that the weight of these problems burdening their everyday lives made them feel worthless.

Several (6) of the twenty research participants interviewed described the problems of the community as having no effect on their everyday lives. These participants did not appear to want to admit they were affected by these problems. Take for example, the claims made by Mrs. Yolanda Sweat (April 1, 2003):

> They really don't affect me, myself. I trust in God. If you have a situation and you can't solve it, you need to call the local officials, and if they don't respond you have a God who can fight your battle.

I presumed that she was a strong believer in God and thus felt that faith could solve the problems in the Red River community, especially as she kept referencing the scriptures and God's name as she spoke. On a number of occasions she referenced a particular scripture in the Bible. At times I even thought she was preaching to me and was trying to get me to respond with an "Amen."

Awareness of other Environmental Problems

The majority (14) stated that environmental problems (sewer, trash/litter, pollution of the Red River) were problems that affected them directly. Mrs. Mary Smith (March 12,2003) explained,

> That is why our community is called the Red River, because of the Red River which is our vicinity. One of the city dumps was within feet of the Red River years ago. The river use to be red now it is green, which I suspect comes from the garbage from those dumps going into that river.

In addition to the pollution from the Red River, participants described the problem with trash, vacant lots, abandoned buildings and litter. As Mr. Leonard Bryant

(March 16, 2003) admitted, "Litter and trash. I see cars drive buy and throw beer bottles and things in our yards and streets." Some participants also mentioned other structural problems such as housing improvements, sidewalks, and playground. I noticed that the need for a playground for the children in the community was frequently expressed in the interviews

Community Activism

The majority (13) of the those interviewed expressed awareness of the Red River District Development Group's attempts to improve conditions in their community. They expressed awareness of several activities by the Red River District Development Group such as having clean-up days and applying for funds from the local city planning office for sidewalks to put in the neighborhood. Most were aware of the two major figures in the group that, over the years, have been fighting to bring about positive social change in the Red River community.

Mr. Dick Williams and Mrs. Stephanie Young are both long term residents of the area and business owners. Mr. Dick Williams organized the Red River District Cooperation Group in the early 1980s to improve conditions for residents of the the Red River community. Mr. Charles Smith also shared a great deal of information about his involvement in civil rights while living in Clarksville. Throughout the interview, I had the impression that he wanted me to know how he was personally treated by others because he kept mentioning how white people considered him a "radical" for speaking out against discrimination. He also made reference to how blacks were pushed from the

downtown area for economic expansion. I was impressed with how Mr. Smith communicated despite having no formal education. It was easy to see that he was very intelligent.

Suggestions to Minimize Problems in the RRC

Of the twenty research participants interviewed, the majority (15) suggested that community activism was the key to addressing problems within the Red River community. Mr. Dick Williams (March 11, 2003) suggested,

> If we all as a community get together and go before a group in the city to let them know what we really need this would show them we mean business.

After listening to the participants' various suggestions, I agreed with Mr Williams that fighting for problems in the community should be a combined effort by residents and not a series of individual efforts. From observing the participants' behavior, I deduced that unified group action had never been accomplished to address issues in the community. I agree with Mrs. Lilly Scott's (March 14, 2003) suggestion that the community should be "more active." However, when pressed to explain how she feels about community activism, she said,

> I can't say to anybody else to do something if I am not active myself. First of all I have to be willing to take a step forward before I can tell anybody else to do anything. I need to attend the meetings.

I felt as if she partially blamed herself for the community's lack of active

participation in solving their problems by the way she kept pointing her finger at herself and sadly keeping her head down as she spoke.

Some of the participants suggested that more police involvement in the community would be the best way to address problems in the community. The need for police protection appeared to be a major concern, as expressed by Mr. Vincent Hines (March 20,2003):

> We need more police patrol through here. That would keep them from standing out on the streets. We need more of police patrol and those in power to clean up the area streets, clean up the litter, and provide funds for this area.

Positive Aspects About Living In the Red River Community

Participants were asked to describe some positive aspects about living in the Red River community. The majority (15) of the research participants interviewed described their close, intimate family relationships as one of the good aspects about living in the Red River community. The participants expressed that everybody in the community knows and respects each other. This information was gladly shared by Mrs. Linda Matthews (March 17, 2003),

> We are like family. Many organizations have been started here in this community. During the month of June we call it a Beautiful Vacation Month cause we in the community get together and help clean up the community.

Others who felt strongly about the community also made the point that they really like it and would not live anywhere else. Mr. Dick Williams (March 11, 2003) strongly voiced that, " I really like it over in this area. This is the only place I have ever lived and

wouldn't like anywhere else. We have good people over here." My impression from Mr. Williams was that he did not want me to view the community negatively. He kept saying over and over again during our interview that we have good people over here. Two other participants also described the "good" location of the community as a positive aspect of living there. The community appears to be close in proximity to various businesses and schools. Mr. Don Johnson (March 20, 2003) pointed out this by saying that, " The Red River community is close to Austin Peay State University and also the downtown area of Clarksville."

Home Ownership

Most of the research participants interviewed said that they owned their home and made reference to living there for a long period of time. I got the impressions from these participants that owning their homes made them feel good about being a part of the Red River community.

Perceptions about the Draft Questionnaire

At the end of the interviews, participants were asked several questions after they filled out the questionnaires. All twenty participants had very positive comments about the questionnaire The majority (18) said that the questions were good, clear and easy to understand. They also expressed that they liked the cover design and felt it was appropriate for this study. The participants also said that I covered all that needed to be covered about the Red River community. Only a few of the research participants said that

the questionnaire was too long. However, I felt that some of the participants were simply being nice and did not want to hurt my

feelings.

A number of times I encountered a participant who agreed to fill a survey out, but noticed how his/her body language upon seeing the actual questionnaire registered surprise. I was not sure if that surprise should have been read as positive or negative response. Only when they started filling out the questionnaire did they appear to be at ease.

Summary and Conclusions: In-Depth Interviews

The purpose of the in-depth interviews was to gain a better understanding of the key issues in the Red River community and to refine the survey instrument. This part of the study was exploratory and the results touched on many aspects of the informants' experiences. I asked questions (see Appendix H) of how residents of the Red River community perceived and understood problems in their community. Thus, its objective was to document the impressions of a small number of black residents who had lived in Red River community for a period of at least ten years had about the Red River community. I asked the informants to give me a word picture of their understanding regarding these issues. The study's collection of raw data used in-depth interviews that centered on aspects of the environment in the Red River community and the effects these problems had on the quality of life of the residents of the community. These included years of residency, description of the community, boundaries of the Red River

community, perception of the community, race, social problems in the community, effects of the social problems, activism of groups to eradicate social problems, positive aspects living in the Red River and ownership status in the community.

The participants' words documented their perceptions of these aspects within the overall framework of the study. Out of the raw data collection came other specific social and environmental aspects that were integral to these participants' perceptions of their experiences. These included drugs, police protection, clean-ups, discrimination, pollution, and infrastructure problems.

These interviews indicated that my participants had not only lived in the community for a long period of time, but it was clear that they had a sense of community. They all expressed how much they liked living in the Red River community. Also, some of the participants had concerns about problems in the Red River community existing due to discrimination. This was voiced among the males and not the female participants during the interviews.

The younger participants appeared to be more concerned than older participants about negative perceptions of the neighborhood by the larger city of Clarksville due to its racial and economic makeup of the Red River community. The older participants(senior citizens) interviewed often referred to how the Red River community used to be years ago: a community with community businesses, where wealthier blacks (first principal, teachers, doctor, post office worker) resided. The older participants felt that life was better back then than it is today. However, the data suggested that the Red River community was plagued by several problems, such as drugs, pollution and the need for

clean-up. The data also showed that all of the males and females were both concerned about the environment in the Red River community. There were no differences in the level of concern expressed between the younger and older participants. The younger participants shared more concern about drugs and the older participants about pollution during the interviews. The major concern was drugs followed by structural problems and pollution.

Interviews suggest that the problems in the Red River community were real and had not been addressed by the local government. Their concerns appear to have been overlooked and undervalued by the local government for a long period of time. These problems are real for the residents of the Red River community. They were very good at sharing this with me. The data revealed the community's low level of activism to deal with problems in their community. The Red River District group's struggle over the years to help the community had been met with limited success. Participants believe that community action is necessary to bring about social change in the Red River community. The overall impression is that significant social and environmental problems exist in the community but many residents feel helpless in addressing them.

These interviews provided ample evidence of problems and concerns residents have about their community. The results helped me to refine the final survey instrument by making me aware of the issues and problems residents of the Red River community were concerned about. I was able to make major revisions and modifications to the draft questionnaire, from 75 to 33 questions, therefore reducing reliance on my subjective understanding of the research topic.

Quantitative Results: Mail Survey

This part of Chapter IV presents the quantitative findings of the mail survey. The purpose of the quantitative analyses was to test the hypotheses that were presented in Chapter II by using data obtained from a mail survey of residents living in, or around, the Red River community in Clarksville, Tennessee. Independent Sample T tests, bivariate correlations and regression analyses were employed to test them. Independent-Sample T tests were used to test for significance mean differences between Blacks and Whites on indicators of environmental concern (H1), health (H2) and justice (H3). Bivariate correlation analyses were used to test for a relationships between these measures (H4-H6) and a stepwise regression analysis was used to predict environmental concern (EC3) from indicators of environmental health, justice, and race.

The identification of social bases of environmental concern among blacks— i.e., the social demographic characteristics of black concern (see, H7-H10) was based on bivariate analyses for age, education, household income and political affiliation. An Independent Sample T Test was performed to test for mean differences between females and males (H11).

Description of Sample

This study consisted of respondents from the Red River community and others located nearby in Clarksville, Tennessee. The social demographic characteristics of the final sample of 247 respondents were as follows: race (50.4% Whites, 38.8% Blacks and 10.7 % Other), gender (55.3% male and 44.7 % female), job status (53.9%

employed full-time, 6.6% employed part-time, 27.4% retired, 3.3% unemployed, 2.1 % student, 5% homemaker and 1.7% other), all with varying income and educational levels. In addition, 55.4 percent of those sampled have lived in the Red River community for least 3.81 years, and 90.6 percent of all other respondents lived within 1 to 2 miles of the Red River community.

Findings: Study Hypotheses

First, I will discuss group (black/white) differences in environmental concern. I will then discuss group differences in environmental health and justice. Then I will identify any significant relationships between environmental concern, health, justice and race.

Environmental Concern Three indicators of environmental concern were used to examine and test the first hypotheses (H1) which assumed that blacks are more concerned about the environment than whites.

Environmental Concern Index

An Independent-Sample T Test was used to compare group differences (black/white) on this 14 item index (**EC-Index**) that measured specific environmental concerns in their neighborhood (litter, quality of the drinking water, exposure to wastes, pollution, lead poisoning etc.). The scores ranged from 14 to 70 with a Mean of 48 and a Standard Deviation of 16. A Mean of 48 suggests that respondents were concerned about these problems but that there was a fair amount of variation in their responses.

Table 4.1 below provides a summary of the percentages of respondents who only reported being concerned about these problems. As we can see, the majority of respondents were concerned about every problem except agricultural run-off (41%). They were most concerned about litter (75%), condition of streets and roads (65%), followed by the condition of streams and rivers (64%) and exposure to waste and pollution (58%).

Next, only blacks and whites are examined. These findings demonstrate that blacks are more concerned about environmental problems in their neighborhood than whites. Specifically, blacks have a higher mean score (56.2) than whites (42.6) on the

Table 4.1
Public Concern for Neighborhood Environmental Problems (EC-Index)

Problem	Percent Concerned
Litter	75
Condition of streets and roads	65
Condition of streams and rivers	64
Wastes & pollution	58
Quality of drinking water	56
Condition of green areas etc.	55
Rats, mice or cockroach problems	54
Abandoned homes and empty lots	53
Loss of trees, green space, wildlife	51
Concern for dumps	51
Public buildings and etc.	51
Lead paint and lead poisoning	49
Flooding and water damage	48
Agricultural run-off	41

EC Index and were more concerned about a number of these problems. For example, 90 percent of the black respondents were concerned about litter, compared to 63 percent of the whites; 81 percent of black respondents were concerned about the quality of drinking water compared to 63 percent of whites; and 80 percent of black respondents were concerned about waste and pollution, compared to 38 percent for whites. In fact, blacks reported more concern than whites on every one of the items except for two: the loss of trees/green space/wildlife (53% vs. 60%), and agricultural run-off (56% vs. 62%). Overall, the results of the Independent Samples T test (**see, Table 4.2**) of EC1, revealed that blacks were significantly more concerned about neighborhood environmental problems than whites.

Environmental Concern II

Next, I will examine perceptions about the quality of the overall environment in their neighborhood (**EC-II**). This variable is different from EC Index in that it assessed public perceptions of the *overall* quality of the environment in their neighborhood. It was also a single-item indicator rather than an index of items that was used to test for group differences. It asked respondents how concerned (very unconcerned-very concerned) they were about the quality of the overall environment in their neighborhood. Of the respondents who answered this question, 47 percent of them reported being somewhat or very concerned about the overall quality of the environment in their neighborhood. A Mean (4.0) and Standard Deviation (1.3) on this item indicates that most respondents were concerned about the overall quality of the environment in their

Table 4.2: Group Comparisons
Environmental Concern (EC), Health (EH) and Justice (EJ)

Indicator	Group	N	Mean	SD	T	Sig (1-tailed)
EC Index	Blacks	78	56.2	13.7	6.2	<.001
	Whites	112	42.6	15.5		
EC-II	Blacks	78	4.4	1.0	5.4	<.001
	Whites	112	3.5	1.3		
EC-III	Blacks	78	3.4	1.2	6.8	<.001
	Whites	112	2.3	1.0		
EH Index	Blacks	78	23.0	10.5	5.6	<.001
	Whites	112	15.8	7.1		
EJ Index	Blacks	78	37.6	8.8	4.1	<.001
	Whites	112	32.9	7.2		

NOTE: Higher mean scores on the EC indicators reflect greater concern for environmental problems in their neighborhood. Higher mean scores on the EH Index reflect a greater likelihood that members of this group believe they have experienced health problems from being exposed to environmental contaminants in their neighborhood. Higher mean scores on the EJ Index reflect a greater likelihood that members of this group believe local officials and agencies have unfairly subjected them to a range of environmental injustices.

neighborhood.

The group means show that blacks had a higher mean score (4.4) than whites (3.5). This indicates that blacks are more concerned about the quality of the overall environment in their neighborhood than whites. More specifically, data show that 62 percent of blacks were very concerned compared to 26 percent of whites. An Independent Samples T Test of the group means on **EC-II (see, Table 4.2)** revealed that these differences were statistically significant ($p < .001$). Again, these findings suggest that blacks are more concerned about the environment than whites and support the first hypothesis (H1).

Environmental Concern III

Another single item indicator of environmental concern, (**EC-III**) was used to identify possible group differences between blacks and whites. Respondents were asked how serious (Not Serious At All-Very Serious) the environmental problems were in their neighborhood and higher scores indicate greater environmental concern. Of the respondents who answered this question, thirty-three percent of them expressed they were unsure about the seriousness of environmental problems in their neighborhood. Twenty-five percent of them thought that problems were "less than serious" followed by 26.5 percent of respondents who believed that were either very serious (8.5%) or serious (18%). A Mean of 2.8 and a Standard Deviation of 1.2 indicates that the average respondent was unsure about the seriousness of environmental problems in their neighborhood.

An examination of the group means, however, showed that blacks had a significantly higher (p<. 001) mean score (3.4) than whites (2.3). Blacks tended to be leaning more towards thinking the problems were serious. Whites thought environmental problems in their neighborhood were "less than serious." Independent Sample T test (**see, Table 4.2**) on **EC-III** confirmed that these group differences were statistically significant (p.<.001). Again, this indicates that blacks and whites do differ in their level of concern for the environment. These results also support the first hypothesis (H1).

Summary: Environmental Concern

The Independent Samples T Tests found a statistically significant difference in means scores between blacks and whites on all three measures of environmental concern (EC Index, EC-II, EC-III). Blacks were more concerned about the environment than whites. These findings suggest that a strong link may exist between race and environmental concern and support the first hypothesis (H1).

Environmental Health

This section presents the findings for environmental health concerning peoples' perceptions of health risk from exposure of environmental conditions in their neighborhood. A nine-item index asked respondents if they thought any member of their household had experienced certain side effects as a result of poor environmental conditions in their neighborhood. The scores ranged from nine to 45 on the EH Index with higher scores reflecting a greater likelihood (very unlikely-very likely) that the person believes he or she has experienced health problems from being exposed to

environmental contaminants in their neighborhood. These side effects include stress or emotional problems, stomach or body aches, headaches, nervous disorder, loss of appetite, significant weight loss or gain, skin problems, memory loss or learning disabilities, and breathing problems, asthma or allergies. A Mean of 19, and a Standard Deviation of 9.3 indicates that on the average respondent thought it was *unlikely* that they or members of their household had experienced side effects or health problems as a result of poor environmental conditions in their neighborhood. Respondents who answered this question (**see Table 4.3**) reported breathing problems (27%) followed by stress (26%), headaches (19%), stomach aches (16%), skin rashes or skin problems (16%), nervous disorders (13%) and 9 percent for the remaining health problems. Blacks as a group, however, had a significantly ($p < .001$) higher mean score (23) on this scale than whites (15.8). Consequently, they felt that it was *more likely* that they, or any member of their current household, had experienced health problems as a result of exposure to environmental contaminants in their neighborhood than whites (**see, Table 4.2**). For example, 43 percent of blacks indicated that stress was a side effect of the environ mental conditions compared to 14 percent of the whites, and for stomach aches, blacks reported 30.4 percent whereas whites reported only 6 percent. Overall, the results suggest that blacks think these health problems are more likely to occur as a result of environmental conditions in their neighborhood than whites. All of these finding support the second hypotheses (H2).

Table 4.3
Health Problems Believed to be Related to
Poor Environmental Conditions in the Neighborhood

Health Problem	Percent who thought it was likely
Breathing Problems, asthma or allergies	27
Stress or emotional problems	26
Headaches	19
Stomach or body aches	16
Skin rashes or skin problems	16
Nervous disorders	13
Memory loss or learning disabilities	9
Significant weight loss or gain	9
Loss of appetite	9

Environmental Justice

This 11-item index (**EJ Index**) was created to tap environmental discrimination concerns. Respondents were asked their views about how local and county officials have attempted to address environmental condition in their neighborhood. The range of scores were 11 to 55 with the higher scores reflecting a greater likelihood that residents believe local officials and agencies have unfairly subjected them to a range of environmental injustices. A Mean of 35 and a Standard Deviation of 8.3 suggests that the average respondent was unsure that this was happening but that there was a good amount of variation among them.

Some of the items asked respondents if their local and county officials asked the community for its input, held meetings about problems, informed them about those problems, involved them in the decision-making process, ignored their environmental

concern, enforced environmental laws, spent too little time and money on their community, exposed them to more than a fair share of pollution and degradation, did a good job at addressing environmental concern among minorities.

Table 4.4 presents the percentage of those who answered these items in the EJ Index. Of the individuals who provided answers to these items, 53 percent indicated that the local and county officials did not spend enough time and money on improving environmental conditions in their neighborhood, 46 percent indicated that they held meetings about these problems, 45 percent reported that officials spent too much time and money on other communities and 40 percent reported that officials ignored their environmental concerns. A significant proportion of them (1/3) thought that local and county officials exposed them to *more than a fair share* of pollution and degradation and felt that local agencies and officials do not care about minorities **(see Table 4.4)**.

The group mean on the EJ Index was 38 for blacks and 33 for whites. This suggest that there is a *greater likelihood* that blacks believe local officials and agencies have ***unfairly*** subjected them to a range of environmental injustices. An examination of some specific items in the scale for blacks and whites showed that black respondents' perceptions were not the same as those of whites. For instance, only 23 percent of black respondents agreed that officials inform them about problems, compared to 30 percent of the whites respondents; 59 percent of black respondents agreed local officials ignore their environmental concerns compared to 27 of white respondents; 62 percent of blacks agreed that officials do not spend enough time and money on their community, compared to 45 percent of the whites; 68 percent of the black respondents agreed that

Table 4.4: Public Perceptions about Environmental Justice

Local (County and City) Public Agencies and Officials . . .	Percent Agree
Do not spend enough time & money on the environment	53
Held meetings about these problems	46
Spent too much time and money on other communities	45
Ignored our environmental concerns	40
Enforced environmental laws & regulations	37
Ask the community for its input	35
Exposed us to more than a fair share of pollution & etc.	33
Do not care about minorities	32
Informed us about these problems	27
Involved us in the decision-making process	24
Do a good job at addressing EC among minorities	22

officials spend too much money on other communities, compared to 27 percent of whites. Moreover, 55 percent of blacks agreed that officials expose them to more than a fair share of pollution and degradation compared to 17 percent of whites. Finally, 59 percent of black respondents agreed that local officials did not care about minorities compared to 10 percent of the whites.

Independent Samples T Test result **(see Table 4.2**) revealed that these mean differences were statistically significant ($p<.001$) and suggests that blacks and whites do differ in their perceptions of environmental discrimination. Blacks are more likely to agree that local official and public agencies have unfairly subjected them to environmental injustices. These results support the third hypothesis (H3) that blacks are more concerned about environmental justice than whites.

Next, we tested for relationships (see, H4-6) between public concern for the

environment, environmental health, environmental justice and race. **Table 4.5** presents the results of the correlation analysis between these variables.

Environmental Concern and Health

First, I tested the fourth hypothesis (H4) that assumes public concern for the environment (i.e., *environmental concern*) is positively related to public perceptions about environmental health. The results suggest a significant relationship ($p < .001$) exists between each indicator of public concern for the environment and public perceptions about environmental health (**see, Table 4.5**). Thus, residents who are concerned about environmental problems in their neighborhood ($r = .32$) , its overall

Table 4.5
Correlations Between Race, Environmental Concern, Health, and Justice

	EC Index	EC-II	EC-III	EH Index	EJ Index
Race (B/W)	-.41	-.37	-.45	-.38	-.29
EC-Index		.74	.55	.32	.21
EC-II	-	-	.57	.38	.24
EC-III	-	-	-	.55	.38
EH Index	-	-	-	-	.32
EJ Index	-	-	-	-	-

Note: All of the correlations were significant ($p < .001$; 1 tailed test).

environmental quality (r = .38), think that these problem are serious (r =.55), are more likely to believe that they (or any member of their household) had experienced a number of health problems as a result of poor environmental conditions in their neighborhood. These results lend strong support to the third hypothesis (H3) that assumes there is a positive relationship between *environmental concern* and *environmental health.*

Environmental Concern and Justice

Next, I tested the fifth hypothesis (H5) which assumes public perceptions of environmental concern problems are positively related to perceptions of environmental justice. The correlation results (**see, Table 4.5**) demonstrate that there is a statistically significant relationship ($p < .001$) between each indicator of environmental concern and perceptions of environmental justice. Thus, residents who are concerned about environmental problems in their neighborhood
(r = .21), its overall environmental quality (r = .24) , and think that these problem are serious (r =.38), also are more likely to believe that local officials and agencies have *unfairly* subjected them to a *range of environmental injustices.* These results lend moderately strong support to the third hypothesis (H4) that assumes there is a positive relationship between *environmental concern* and *environmental justice.*

Environmental Health and Justice

I also tested for a relationship between public perceptions about environmental health and environmental justice (H6). The results of the correlation analysis (**see, Table 4.5**) show that there is a significant positive relationship (.32) between the two variables. Thus, residents who believe that they (or any member of their household) had experienced a number of health problems as a result of poor environmental conditions in their neighborhood also are more likely to believe that local officials and agencies have *unfairly* subjected them to a *range of environmental injustices.* These results lend moderately strong support to H6 that assumes public perceptions of environmental health are related to public perceptions of environmental justice.

Environmental Concern, Health, Justice and Race

The overall results of the correlation analyses support the earlier results based on the Independent Sample T tests. They show that blacks are more concerned: about environmental problems in the neighborhood (EC Index), the overall environmental quality in the neighborhood (EC-II) and are more likely to believe these environmental problems are more serious (EC-III) than whites. Blacks also felt that it was *more likely* that they, or any member of their current household, had experienced health problems (EH Index) as result of exposure to environmental contaminants in their neighborhood than whites. They are also more likely than whites to believe local officials and agencies have *unfairly* subjected them to a range of environmental injustices. Overall, it appears that race is strongly related to public concern for the environment and public perceptions

of environmental health and justice. In short, race matters when it comes to understanding these three dimensions of environmentalism.

Predicting Environmental Concern

Next, exploratory stepwise regression analysis was performed to try to determine how much variation in EC-III was explained by environmental health, justice and race. The three variables together (EH Index, EJ Index and race) were found to explain 28 percent of the variance in EC-III. The results of the regression analysis also revealed that the index of environmental health had a significant relationship (*Beta* = . 39: p<.001) with EC-III. Since the standardized correlation coefficient (*Beta*) was positive, this means that an increase of one standard unit on the EH index results in a change of .39 of a standard unit in EC-III. In short, perceptions of environmental health are linearly related to EC-III and knowledge of public perceptions about environmental health problems can be used to predict public concern about the seriousness of environmental problems in their neighborhood. Moreover, this relationship remained significant even after controlling for the effects of the environmental justice index and race. It was also the best predictor of EC-III relative to the environmental justice index and race and explained 28 percent of the variance in EC-III.

The second best predictor of EC-III was race (Beta = -.24: p <.001) . This lends more support to the idea that race is important factor to know in trying to understand environmental concern. It also explained about seven percent of the unique variance in EC-III. Overall, blacks were found to be more concerned about the seriousness of

neighborhood environmental problems in this area than whites even after controlling for the effects of environmental health and justice.

The environmental justice (EJ Index) was also found to be a significant (albeit weaker) predictor of EC-III (*Beta* = .17: p <. 01). It explained about three percent of the unique variance in EC-III. Thus knowledge of public perceptions about environmental justice can be used to predict public concern about the seriousness of environmental problems in their neighborhood. Moreover, this relationship remained significant even after controlling for the effects of the environmental health index and race.

Social Bases of Environmental Concern Among Blacks

The results of the correlation analyses that tested for relationships between environmental concern among blacks and key socio-demographic variables (i.e., *the social bases*) are presented in this section (**see, Table 4.6**). We already know from the literature review that there is very little known about the social bases of environmental concern among blacks. The study examines first the age (H7) followed by education (H8), political ideology (H9), household income (H10) and finally gender (H11). I will then conclude with a summary of the social bases of environmental concern.

The *age hypothesis* (H7) asserts that younger blacks are significantly more concerned about environmental quality than older blacks. The Mean of 55.4 with a Standard Deviation of 15 on age indicates that the average age of the black respondents was 55 years old and that most of them were middle age or older.

Table 4.6
Correlations between Key Socio-demographic Variables and Environmental Concern among Blacks

	EC-Index	EC-II	EC-III
Age (younger-older)	.22*	.29**	.00
Education (lower-higher)	.07	.04	.05
Household Income (lower-higher)	-.16	.00	-.08
Political Ideology (Democrat-Republican)	-.13	-.24*	-.16

* Significant (p <. 05) ** Significant (p <.01) one-tailed

The correlations between age and EC Index (.22) and EC-II (.29) were significant and moderately strong. The direction of this relationship was in the opposite direction of what was expected and what is usually found in the social bases of environmental concern literature. These findings indicate that older blacks are more concerned about a range of environmental problems in the neighborhood and its overall environmental quality. However, an analysis of the frequencies suggest that blacks of all ages tend to believe that there are serious environmental problems in their neighborhood (EC-III). Both sets of finding do not support H7.

The *education hypothesis* (H8) posits that more highly educated blacks are significantly more concerned about the environment than less educated blacks. A majority (52%) of black respondents reported having a high school diploma/GED or less

and the medium response was a high school diploma/GED. Less than 12 percent of the black respondents had a college degree As shown in **Table 4.6**, no statistically significant relationships were found between education and the three indicators of environmental concern. indicators (EC Index, EC-II or EC-III). An analysis of the frequencies demonstrated that regardless of education, blacks in general are concerned about the environment and tend to believe that there are serious environmental problems in their neighborhood. These findings do not support H7.

The *political ideology hypothesis* assumes that Liberal Democrats are more concerned about the environment than Conservative Republicans. The survey question asked respondents to pick which of the following (Liberal Democrat, Moderate Democrat, Independent, Moderate Republican, and Conservative Republican) best described their political affiliation. Most (84%) of the black respondent were Democrats and half of them (49%) were Moderate Democrats .

Table 4.6 shows that all of the correlations were in the expected direction (inverse) and suggest that black Democrats are generally more concerned about the environment than Independents or Republicans. However, only EC-II was found to be significantly related (-.24: $p < .05$) to political ideology. This means that Democrats are more concerned about the overall quality of the environment than Independents or Republicans and lends some limited support to H9.

The *income hypothesis* (H10) asserts that blacks living in households with higher incomes are equally concerned about the environment as those individuals that are living in households with lower incomes. The results of the correlation analysis strongly support

this assumption and the literature on the social bases of environmental concern. Regardless of their household incomes, blacks are concerned about the environmental problems in their neighborhood, and the overall environmental quality in their neighborhood, and tend to think there are serious environmental problems in their neighborhood.

The *gender hypothesis* (H11) assumes that black females are significantly more concerned about the environment than black males. Since this is a group-level variable (female/male) an Independent Samples T test was used to identify any significant group differences on the three indicators of environmental concern (**see, Table 4.7**). Almost six out of ten of the black respondents were female (57%).

The findings generally suggest that black males are more concerned about the environment in their neighborhood than females. This relationship was significant only for EC-III---though the p-values for the other two indicators approached significance ($p < .10$), and are opposite of what was expected.

Therefore, we reject H11 that assumes that females are significantly more concerned about the environment than males. These findings do not conform to the general trend found in the literature of women being more concerned than men (see, Davidson & Freudenburg, 1999).

Table 4.7
Female/Male Comparisons with Environmental Concern among Blacks

Indicator	Group	N	Mean	SD	T	Sig (1-tailed)
EC Index	Females	50	54	14	-1.7	.053
	Males	32	59	12		
EC-II	Females	52	4.3	1.0	-1.5	.073
	Males	41	4.6	0.7		
EC-III	Females	52	3.2	1.1	-.1.9	.03*
	Males	41	3.6	1.2		

NOTE: * Significant ($p < .05$) where higher mean scores on the EC indicators reflect greater concern for environmental problems in their neighborhood

Summary-Social Bases of Environmental Concern among Blacks

Males, Democrats and older black people were generally found to be more concerned about the environment than their respective counterparts. Education and income levels among blacks were not related to concern for the environment among blacks. What can be concluded from these results will be discussed in the next chapter.

Chapter V: Summary, Conclusion and Discussion

Introduction

Despite significant improvements in environmental protection over the last several decades in the United States, and despite the fact that people have become aware of their environment and now take measures to protect it, millions of people of color and the poor continue to live in unsafe and unhealthy communities. This dissertation has found similar problems in and around the Red River community.

Summary

The primary purpose of this study was to conduct a mail survey to obtain information about the opinions and attitudes regarding environmental issues held by the residents living in and around the Red River community (RRC) of Clarksville, Tennessee. This study answered three major questions that formed the backbone of this investigation. The first question contemplated whether blacks were more concerned about environmental problems, had more environmental health concerns, and felt they had been exposed to environmental injustices more than whites. The second question explored possible relationships between environmental concern, perceptions of environmental health and environmental justice, and race. Finally, the third question examined whether there were differences in the social bases of environmental concern among blacks. Results of the mail survey support recent research that shows that blacks are concerned about the environment and to continue to refute claims that suggest blacks are less concerned about the environment than whites. However, this study area, the Red River

community and surrounding neighborhoods was selected due to its disproportionate representation of blacks within the community in regards to economic and environmental injustice. An existing body of literature has already documented many of the environmental threats within communities like the RRC, and it remains necessary to address how residents of communities such as the RRC perceive these and similar environmental threats. As previously mentioned, the preliminary inquiry consisted of interviewing twenty older black residents of the RRC about social and environmental issues in the Red River community, followed-up by a mail survey that was later sent to one thousand residents of the RRC .

The results clearly indicate that the black residents of the greater Red River community are both more aware of environmental problems, the poor environmental quality in their neighborhood and are more troubled by the seriousness of them than whites. For example, Blacks were more concerned about specific environmental problems--- such as litter, condition of streets and roads, condition of streams and rivers, waste and pollution. Similarly, these local environmental problems were also echoed in the in-depth interviews. Results from the in-depth interviews also indicated that litter, waste and pollution and clean-ups were serious concerns.

The findings from this study also demonstrate that the black community has been potentially impacted by environmental injustice in terms of their health. More black residents expressed concerns about adverse health risks such as breathing problems, asthma and allergies. Also, several interviewees also expressed their belief that health concerns such as asthma resulted from the pollution existing in the Red River

community. There is a strong conviction within the black community that their neighborhood has been negatively impacted by exposure to harmful environmental contaminants. They live in proximity to polluting facilities, landfills, litter, wastes, polluted rivers and brownfields. The findings also show that black residents believe they are victims of decisions made by local officials that show preference for other, more affluent and less problematic neighborhoods in Clarksville. Black respondents also expressed that these officials do not involve them in the decision-making process, do not spend enough money on their neighborhood. Therefore, it can be concluded that environmental injustice exist.

Results of the analysis on the social bases of concern among blacks were somewhat mixed. As expected, Black Democrats were more environmentally concerned than Independents and Republicans (H9) and there were no differences based on one's household income (H10). Both findings are usually found in other studies. Less expected was that black males were more concerned than black females (H11) Hypothesis seven (H7) assumed that younger black people were more concerned about the environment than older people but the opposite was found. Such findings may suggest that the longer a black person lives within highly polluted area, the more likely they are to be aware of environmental problems. Hypothesis eight (H8) assumed that more formally educated blacks were significantly more concerned about the environment than less educated blacks. This hypothesis was also not supported by the findings of this study. Apparently, education does not influence black concern for the environment—probably because environmental problems in their neighborhood are so serious and so evident.

These findings are significant in that they show that black residents do not basically differ from each other when it comes to their perceptions about the environment. It can be concluded that blacks in the Red River community are to a certain extent unified regarding the concerns about the environment, health problem with poor environmental conditions the way these problems have been unjustly and unfairly handled by local public official and agencies.

Significance of Study

This study is the first of its kind about black environmental concern. It is valuable because it assesses the perceptions blacks in terms of the power that they feel the governing officials have over their environmental well-being. It is clear that blacks have more than a fair share of the environmental degradation, pollution, and exposure to environmental hazards. While blacks in the RRC tend to live in rent-controlled housing and face an assortment of environmental and social threats, the white community has greater resources and political power to deal and avoid them. The findings support Parker and McDonough's (1999) that suggest that the black community is aware of the environmental threats and the likelihood of environmental injustice, but feel that they do not have any power to combat these threats. Thus, our research findings may be invaluable to blacks living in the RRC because it demonstrates that they all face a shared threat when it comes to environmental degradation *and* discrimination.

What such findings show in respect to this study is that the black neighborhood within the RRC is more concerned about environmental threats, but also feel that

environmental injustice exist. Prior studies have documented many cases of environmental justice issues (Bullard, 1990; Arp, 1994, Arp & Kenny, 1996). Blacks in the Red River community also feel as though they do not have the ability or the methods to invoke social change. The nature of environmental injustice in this respect is a continuation on the theme of a lack of power as noted in Chapter I, where the black members of the RRC are not able to effectively make social change. For the black community, this lack of power is both frustrating and discouraging. As some of the interviewees declared they felt like outcasts. Why should the members of the black community fight to invoke social change and environmental justice if they have no real chance of forcing such change to take effect? The result is a figurative downward spiral, in which the black community as a whole has lost the motivation to actively protest against environmental injustice as was the case with the Red River District group. In short, if there is no massive outward resistance, the problems that spark environmental health concerns within the RRC's black community will worsen. Ideally, a potential impact of this study would be the promotion of social awareness within the RRC for both black and white community members.

While existing conditions of environmental injustice (e.g., lead paint and construction of housing over former landfills) might not be targeted for change due to a lack of sufficient funding, the community members can become more active and work together to address future potential environmental threats as well as to minimize the impact of existing threats. Levine(1982) chronicles very similar struggles of residents exposed to environmental degradation in the Love Canal area of Niagara Falls. However,

this approach can assist the members of this neighborhood to promote environmental justice. In addition, a secondary benefit of this project would be increased awareness of local officials and policy makers in the larger city of Clarksville in respect to environmental injustice and the need for improved environmental policies that promote environmental justice.

Overall, these findings from the exploratory in-depth interviews and mail survey provide empirical evidence that environmental injustice exists in the Red River community. These findings are important because they share similar results to many other studies on concerns and the impact of environmental injustices on communities of color and the poor (Bullard, 2000; Pinderhughes, 1996; Brown, 1994; Mohai & Bryant, 1992). Also, the impact of this study can be used to assist contaminated communities like the RRC to become active to bring social change to their neighborhood. In addition, these findings can assist policy makers and other local officials to understand the importance of environmental justice for all of its citizens.

Limitations of the Study

Potential weaknesses of this study can be found regarding the individuals who completed the surveys; the majority of the respondents were older people (average age was 55 yrs.). Another limitation resulted from the small sample size within the Red River community itself. This might have potentially skewed the results of the survey with such a limited sample size. Finally, another limitation of the study deals with the limited number of participants that was interviewed. They were comparatively small in respect to

the overall population residing in the Red River community. If the results of this study are considered sufficient representation of the perceptions of environmental injustice between white and black residents, this same study method can be enlarged to include a greater number of residents from the large community of Clarksville.

Recommendations for Further Study

A larger sample of the population would allow a more thorough presentation of the seriousness of the effect these environmental injustices have on people of color and the poor. The results of this study could also be furthered and positively impacted in the exploration of actual physiological evidence from black residents. While perhaps prohibitively expensive, a random sampling of the blood and urine from volunteers in the survey group would help to better show the results of environmental injustice. If black residents manifested significantly higher levels of toxins, this could help validate the inferences that the environment in the black community is contaminated. It would be extremely difficult for local officials of the City of Clarksville to deny the presence and the negative impact of environmental injustice if both the survey results and the supporting fluid assessment sampling results were provided in tandem.

A political economy approach could be employed to assess social inequality issues with race, class and gender. Finally, the indices developed (EC-Index, ECII, ECIII, EH-Index, and the Justice-Index) could be used by other scholars who are advocates for environmental justice, environmental concerns, adverse health affects from exposure to environmental contaminants. These indices could also serve to advance research on race

issues, race and ethnic relations, African American Studies, and other cultural studies .

Closing Statement

This study has provided evidence that race continues to play a vital role in the distribution of environmental contaminants as well as environmental injustice and perceived adverse health risks from exposure to contaminants. Blacks in the Red River community do care about their ecological environment and are concerned about environmental discrimination. They are socially, economically and politically disenfranchised and their capacity to resist and defend their interests is extremely weak. Blacks in this community want a better quality of life for themselves and their families but structural barriers and the lack of resources have hindered them from continuing the fight for environmental justice. Although this is the case for blacks in the Red River community, we must not stop the struggle. *Environmental Justice for one is Environmental Justice for everyone.*

REFERENCES

Reference

Adeola, Francis O. (2000). "Endangered community, enduring people: Toxic contamination, health, and adaptive responses in a local context." *Environment and Behavior*, 32(2):209-249.

_____ (1995). "Demographic and socioeconomic differential in residential propinquity to hazardous waste sites and environmental illness." *Journal of the Community Development Society*, 26(1):15-40.

_____ (1994). "Environmental hazards, health, and racial inequity in hazardous waste distribution." *Environment and Behavior,* 26:99-126.

Albrecht, S. L. (1995). "Equity and justice in environmental decision making: A proposed research agenda." *Society and Natural Resources.*8(1):67-72.

Alier, Joan M. (2001). "Retrospective environmentalism and environmental justice movement today."*Capitalism, Nature, Socialism*, 11(4):45-51.

Alston, Dana (1992). "Transforming a movement: People of color unite at summit against environmental racism."*Sojourners,* 21 (January):30-31.

Anderton, et al (1994). "Studies used to prove charges of environmental racism are flawed." In J.S. Petrikin (Ed.) *Environmental Justice*. Greenhaven Press, pp.24-37.

Arp, W. and J. Llorens (1999), Environmental justice for black americans: A question of fairness." *Western Journal of Black Studies,* Summer.

Arp, William. (1994). "A triad of environmental concern: Race, party affiliation and political ideology." *The Western Journal of Black Studies,* 18,3:21-131.

Arp, William, and Christopher Kenny. (1996). "Black environmentalism in the local community context." *Environment and Behavior,* 28,3:267-283.

Arrandale, Tom (1992). "Environmentalism and racism." *Govering* (Feburary).

Babbie, Earl (1998). *The practice of social research.* Belmonth: London:Wadworth Publishing Company.

Bailey, Conner, Charles E. Faupel and Susan H. Holland (1992). "Hazardous wastes and differing perceptions of risk in sumter county, alabama." *Society and Natural Resources,* 2:1-36.

Ban, J. and Kohl (1991). "Environmental justice: Highlander alter myles." *Social Policy*, 21(3):71-77.

Barsh, R. (1990). "Indigenous peoples, racism and the environment."*Means/in,* 49(4), Summer: 723-71.

Baugh, J. (1991). "African americans and the environment: A review essay." *Policy Studies Journal*, 19(2):182-191.

Been, Vicki (1993. "Market forces, not racist practices, may affect the siting of locally undesirable land uses." pp.38-59, In *Environmental Justice (*ed.*)* J. Petrikin, pp.38-59. Greenhaven Press, San Diego, CA.

Blocker, T. J.and D.L. Eckberg. (1997)."Gender and environmentalism: results from the 1993 General Social Survey." *Social Science Quarterly,* 78(4):841-58.

_____. (1989). "Environmental issues as women's issues: General concerns and local hazards."*Social Science Quarterly* 70(3):586-593.

Bord, R.J. and R.E. O'Conner (1997). "The gender gap in environmental attitudes: The case of perceived vulnerability to risk." *Social Science Quarterly,* 78(4): 830-840.

Bouland, G. (1993). "Combating environmental racism." *Christian Science Monitor,* 17:8-24.

Brown, M. H. (1987).*The Toxic Cloud: The Poisoning of American's Air*. New York: Harper Row Publisher.

Brown, Phil (1994). "Race, class and environmental health: A review and systematization of the literature." *Environment Research* 69:15-30.

Bruce, Calvin(1993). "Environmental and student activism."*Black Collegian*, 23(4):52-57.

Bullard, Robert (2002). "Environmental Justice in the 21st Century." Environmental Justice Resource Center at Clark Atlanta University. 22 March 2002<http://www.ejrc.cau.edu>.

Bullard, R. (2000) *Dumping in Dixie: Race, Class, and Environmental Quality* (3rd. Ed.) Westview Press.

_____ (1999). "Dismantling environmental racism in the usa." *Local Environment*,

4(1):5-9.

_____(1995). "Race, justice and the environment." *Who Cares.*(Spring):34-41.

_____ (1994). "Environmentalism racism and "invisible communities."*West Virginia Law Review,* 96:1037-1050.

_____ (1994). "Legacy of American Apartheid and environmental racism."*St. John's Journal of Legal Commentary,* 9,2:445-472.

_____(1993) *Confronting Environmental Racism: Voices from the Grassroots.* Boston: South End Press, pp.1-259.

_____ (1992). "In our backyards: Minority communities get most of the dumps." *EPA Journal*, 8:11-12.

_____(1990). *Dumping in Dixie: Race, Class and Environmental Equity.* Boulder, CO: Westview Press, pp.1-165.

_____ (1990). Ecological inequities and the new south: Black communities under siege." *Journal of Ethnic Studies,* 17:101-115.

_____(1983). "Solid waste sites and the black houston community." *Social Inquiry,*53:273-288.

Bullard, R. and J. Feagin (1991). "Racism and the city." (4:55-76) in M. Gottdiener & C. Pickvance (Eds.) *Urban Life in Transition*, Newbury Park, CA: Sage.

Bullard, R, R. Moore and L. W. Cole. (2002). "Communities want development without discrimination." Environmental Justice Resource Center at Clark Atlanta University, 30 January, 2002<http.www.ejr.cau.edu>.

Bullard, R., Warren, and G. Johnson (2001). "The quest for environmental justice." in R.L. Braithwaite and S. E. Taylors, (Eds.), *Health Issues in The Black Community*. (2nd Ed.) Jossey-Bass.

Bullard, R. D., G. Johnson. and B.H. Wright. (1997). "Confronting environmental injustice: It's the right thing to do." *Race, Gender & Class*, 5(1):63-79.

Bullard, R. & Beverly Wright (1993). "Environmental justice for all: Community perspectives on health and research needs."*Toxicology and Industrial Health*, 9(5):821-842.

Bullard, R.D. and B.H. Wright. (1992). "The quest for environmental equity: Mobilizing the African American community for social change." pp.39-49. In *American environmentalism: The U.S. environmental movement,* 1970-1990. Eds R.E. Dunlap and A.G. Mertig, 39-49. Philadelphia: Taylor & Friends.

Bullard, R.D. and B.H. Wright (1987). "Environmentalism and the politics of equity: Emergent trends in the black community." *Mid American Review of Society,* 12(2) 21-37.

Bullard, R. D. and G. Johnson. (2000)."Grassroot activism and its impact on public policy and decision-making." *Journal of Social Issues* 55(3):555-578.

Burke, Lauretta (1993). "Race & environmental equity: A geographic analysis in los angles." *Geo Info Systems:* 44:46-47.

Business and Legal Report (2003). Federal Brownfields: Regulatory Analysis <http://enviro2.blr.com/topic.cfm/topic/154.

Caron-Sheppard, Judi A. (2000) "Explaining Gender Differences in Environmental Concern." Association Paper presented at the Society for the Study of Social Problems (SSSP).

_____(1995). "The black-white environmental concern gap: An examination of environmental paradigms." *Journal of Environmental Education,* 26(2):24-35.

Carroll, Ginny (1991). "When pollution hits home." *Natural Wildlife,* 29:30-39.

Chavis, B. (1982), "Environmental racism defined." in *Race and the Incidence of Environmental Hazards: A Time for Discourse* (Bryant & Mohai, 1992, pp.4-5,163-176).

Collette, W. (1985). "Somewhere else usa: Fighting back against chemical dumpers."*Southern Neighborhoods,* 9(September):1-3.

Costner, Pat & Joe Thronton (1990)*Playing with Fire Hazardous Waste Incineration.* Washington,DC: Greenpeace.

Cotton, Paul (1994). "Pollution and poverty overlap becomes issue, administration promises action."*Journal of the American Medical Association,*27(13):967-970.

Creswell, J.W, (1994). *Research Design: Qualitative and Quantitative Approaches.* Sage Publishers.

Cutter, Susan. (1995). "Race, class and environmental justice."*Progress in Human Geography*, 19(1):107-118.

Davidson, D. J. and W.R. Freudenburg (1996). "Gender and environmental risks concerns: A review and analysis of available research." *Environment and Behavior,* 28(3):302-339.

Dillman, D. (2000). *Mail and Internet Surveys: The Tailored Design Method:* New York: John Wiley and Sons, Inc.

Doyle, Kevin (1994). "Environmental justice: A growing movement." *Black Collegian* 24(4):36-40.

Dowie, Mark (1995). *Losing Ground: American Environmentalism at the Close of the Century,* The MIT Press, Cambridge, Massachusetts.

Dunlap R. E. and Van Liere (1980). "The social bases of environmental concern: A review of hypotheses, explanation and empirical evidence." *Public Opinion Quarterly,* 44:181-197.

_____(1981). "Environmental concern: Does it make a difference how it's measured?' *Environment and Behavior,* 13:651-76.

Dunn, Brian (2002). "Black history enters spotlight in Clarksville with friends' help." *The Leaf Chronicle*, February 7, B: p.1-2.

Eckberg, D.L. and T. J. Blocker (1989), "Varieties of religious involvement and environmental concerns: Testing the lynn white thesis." *Journal for the Scientific Study of Religion.* 28(4):509-517.

Edelstein, Michael (1987). *Contaminated Communities: The Social and Psychological Impacts of Residential Toxic Exposure.* Boulder, CO: Westview Press.

Eichstaedt, Peter (1994). *If You Poison Us: Uranium and Native Americans.* Sante Fe: Red Crane Books.

Environmental Defense (1999), Who is polluting your community?"11/26/01 <http://www.scorecard.org/.

Environmental Protection Agency (2001), "Distribution of environmental burden." 7/25/01<http://www.scorecard.org/.

_____(1998), Guidance for incorporating environmental justice concerns in epa compliance analysis, Washington, D.C.

Environmental Justice Resource Center (1994). "Executive Order No.12898: Federal actions to address environmental justice in minority populations and low-income populations" 5/12/03<http://www.ejrc.edu.

Feagin, Joe and Stella Capek (1992). "Grassroots movements in a class perspective."*Research in Political Sociology*, 5:27-53.

Fink, Arlene (1995). *How To Analyze Survey Data,* Sage Publications.

Finley, Mack (2002), Report on Red River/Sulphur Fork Creek Watershed, Studies by the Center for Field Biology at Austin Peay State University, Clarksville, Tennessee.

Fleming and Henry Gemery, (1994). *Science, Technology, and the Environment: Multi disciplinary Perspectives.* Akron, OH: University of Akron Press

Foster, Sheila. (1993). "Race(ial) matters: The quest for environmental justice." *Ecology Law Quarterly*, 20:721-753.

Freudenburg, W.R (1991). "Rural-urban differences in environmental concern: A closer look." *Sociological Inquiry*. 61(2):167-198.

Freudenburg, P. and S. Pastor (1992). "NIMBY's and lulu's: Stalking the syndrome." *Journal of Social Issues,*48(4):39-61.

Friedman, D.(2002). "The "Environmental Racism" Hoax." *The American Enterprise,* November/December.

Frosch-Morello, Rachel A (2002). "Discrimination and the political economy of environmental inequality." *Environment and Planning C: Government and Policy*, 20(4):477-496.

Gaard, G. (1993). *Ecofeminism: Women, animals and nature.* Philadelphia: Temple University Press.

General Accounting Office (GAO). (1983). *Siting of Hazardous Waste Landfills and Their Correlation with Racial and Economic Status of Surrounding Communities,* Washington, D.C., GAO/RCED-83-168.

Gordon, Raymond (1992). *Basic Interviewing Skills*. Ithasca, IL: Peacock.

Greenbaum, Allan (1995). "Taking distributional effects of uniform air pollution policy in the U.S." *Quarterly Journal of Economics,*(May):281-301.

_____(1995). Taking stock of two decades of research on the social bases of environmental concern (p 125-149) in *Environmental Sociology: Theory and Practice* M.Mehta and E. Quellet, Captus Press, p. 125-149.

Greenberg, Michael R. (1993). "Proving environmental inequity in siting locally unwanted land uses." *Risk Issues in Health & Safety,* 4:235-252.

Griffin, R. (1998). *Principles of Hazardous Materials Management.* Chelsea, MI: Lewis Publishers

Grossman, K. (1993). "Environmental racism." *Crisis.* (April) 14-17, 31-32.

Hand, C. and K. D. Van Liere (1984). "Religion, mastery-over-nature and environmental concern." *Social Forces*, 63(2):555-570.

Harrison, F. (1995). "The persistent power of race." in the Cultural and Political Economy of Racism, *Annul Review of Anthropology,* 24:47.

Harley, Troy W. (1995). "Environmental justice: An Environmental civil rights value acceptable to all worlds views." *Environmental Ethics* 17(3):277-289.

Jones, Robert Emmett (2002). "Blacks just don't care: Unmasking popular stereotypes about concern for the environment among African-Americans." *International Journal of Public Administration,* 25 (2).

Jones, R. E. and Dunlap, R.E (2002)."Environmental concern: Conceptual and Measurement Issues, in R.E. Dunlap and W. Michelson (eds) *Handbook of Environmental Sociology.* Westport, CN: Greenwood Press, pp.482-524.

Jones, Robert Emmett (1998, 1996). "Black concern for the environment: Myth versus reality." *Society and Natural Resources,* 11:209-228.

Jones, Robert Emmett and Lewis F. Carter. (1994). "Concern for the environment among Black Americans: An assessment of common assumptions." *Social Science Quarterly,* 75(3): 561-577.

Jones, Robert Emmett, and Riley E. Dunlap. (1992). "The Social Bases of Environmental Concern: Have They Changed over Time?" *Rural Sociology* 57 (1):28-47.

Jones, R.E. , J. M. Fly and H. K. Cordell (1999). "How green is my valley? Tracking rural and urban environmentalism in the southern appalachian ecoregion. *Rural Sociology*, 64(3):482-499.

Kay, Jane (1991). "Minorities bear brunt of pollution." *San Francisco Examiner.*April:7-

10.

Keeva, Steven and Joseph Wharton (1994). "A Breath of justice." *ABA Journal*, 80:88-92.

Klineberg, S.L., M. MeKeever, and B. Rothenbach. (1998). "Demographic predictors of environmental concern: It does make a difference how it's measured."*Social Science Quarterly* 79:735-753.

Knickerbocker, Brad (1998). "Fighting for a cleaner environment: Two decades after love canal put toxic waste on the map, industry tries to keep clean." *Christian Science Monitor* (April, 30):4.

Lavell, M. and M. Coyle (1992). "Unequal protection." *National Law Journal.* p. 52.

Lee, Charles (1992). "Toxic waste and race in the united states." in *Race and The Incidence of Environmental Hazards: A Time for Discourse.* Bryant and Mohai, (Eds.), Boulder: Westview Press.

Levine, A.G. and Lecington Brooks (1982). *Love Canal: Science, Politics, and People.* D.C. Heath and Company.

Lowe, G.D. and Thomas Pinhey (1982). "Rural-urban differences in support for environmental protection." *Rural Sociology*, 47:114-128.

Marshall, Brent (2001) *Bridges and Barriers To Ecosystem-Based Approaches: The Case of Tennessee Valley Authority's Adoption Of The Watershed Approach. Dissertation, University of Tennessee.*

McStay, J.R. and R.E. Dunlap. (1993). "Male-female differences in concern for environmental quality." *International Journal of Women's Studies,* 18 (3) :401-411.

Mitchell, C. M. (1993). "Environmental racism: Race as a primary factor in the selection of hazardous waste sites." *National Black Law Journal*, 12(3):176-188.

Mohai, P (2003). " Dispelling old myths: African american concern for the environment." *Environment.* 45(5):11-26.

Mohai, Paul and B. Bryant. (1998). "Is there a "race" effect on concern for environmental quality?" *The Public Opinion Quarterly, 62(4): 475-505.*

Mohai, Paul. (1990). "Black Environmentalism." *Social Science Quarterly, 74(4):744-765.*

_____(1985). "Public Concern and elite involvement in environmental conservation issues." *Social Science Quarterly* 66: 820-838.

Morrissey, J. and R. Manning (2000). "Race, residence and environmental concern: New Englanders and the white mountain national forest."*Human Ecology Review*, 7(1):12-23.

Morrison, D.E. and R.E. Dunlap, (1986). Environmentalism an d elitism: *A* conceptual and empirical analysis, In *Environmental Management, 10(1986): 581-589.*

Neuman, W. Lawrence (1997) *Social Research Methods: Qualitative and Quantitative Approaches*, Allyn & Bacon Publisher.

Newell, S.J. and C.L. Green (1997). "Racial differences in consumer environmental concern."*Journal of Consumer Affairs,* 31(1):53-62.

Novotny, Patrick (1995). "Where we live, work and play: Reframing the cultural landscape of environmentalism in the environmental justice movement." *New Political Science*, 32:61-79.

Oliver, M.L. and T.M. Sharpiro. ((1997). *Black Wealth/White Wealth: A New Perspective on Racial Inequality,* Routledge, New York, NY

Ozanne, L.K., C.R. Humphrey and P. Smith (1999). "Gender, environmentalism, and interest in forest certification: Mohai's paradox revisited." *Society and Natural Resources,* 12:613-622.

Parker, J.D. and M. H. McDonough. (1999). "Environmentalism of African Americans: An analysis of the subculture and barriers theories." *Environment and Behavior* 31(2):155-177.

Pinderhughes, Raquel (1996). "The impact of race on environmental quality: An empirical and theoretical discussion." *Sociological Perspectives*, 39(2):231-248.

Rosen, Ruth (1994). "Who gets polluted? The Movement for environmental justice." *Dissent,* 41(2):223-230.

Salant, P. and D.A. Dillman (1994). *How to Conduct Your Own Survey,* John Wiley & Sons, Inc.

Samdahl, D. and R. Robertson (1989). "Social determinants of environmental concern:

Specification and test of the model." *Environment and Behavior*, 21(1):57-81.

Shaw, M. (2002). "Black artists make mark in world through Clarksville experience." *The Leaf Chronicle*, February 14, B:1.

Taylor, D. E. (2000). "The rise of the environmental justice paradigm." *American Behavioral Scientist*, 43(4):509-580.

_____(1999).Mobilizing for environmental justice in communities of color: An emerging profile of people of color environmental groups. In *Ecosystem Management: Adaptive Strategies for Natural Resources Organization in the 21th Century,*(pp.33-67). Jennifer Aley, William R. Bunch, Beth Conoren, David Fields (Eds.) Taylor & Francis, pp.33-67.

_____(1993). "Environmentalism and the politics of inclusion" in *Confronting Environmental Racism (*ed) R. Bullard, p. 53-62.

_____(1992). Can the environmental movement attract and maintain the support of minorities. (Pp.28-54). In *Race and the Incidence of Environmental Hazards: A Time of Discourse*. B. Bryant and P. Mohai (Eds.) Westview Press, pp.28-54.

Taylor, D. E. (1989). "Blacks and the environment: Toward an explanation of the concern gap between blacks and whites."*Environment and Behavior* 21(2):175-205.

United State Bureau of the Census (2000), U.S. Bureau of the Census Reports, Washington, DC: Government Printing Office.

_____(2000). Montgomery County Economic Development Population and Demographics. Http://www.clarksville.tn.us.htm.

_____(2000).Table Geographic Comparisons: Employment Status. Fact.finder.census.gov/home/en/datanotes/extst3.htm.

_____(2000). Income and Poverty in 1999-2000. Fact.finder.census.gov/home/en/datanotes/extst3/htm.

United Church of Christ Commission on Racial Justice, (1987).*Toxic Wastes and Race in the United States,* New York: United Church of Christ.

United States General Accounting Office(1983). *Siting of hazardous waste, landfills, and their correlation with racial and economic status of surrounding communities.* Washington, D.C: General Accounting Office

Unger, Donald, A. Wandersman and W. Hallman (1992). "Living near a hazardous waste facility: Coping with individuals and family distress." *American Journal of Orthopsychiatry,* 55:62.

Walsh, Edward, Warland, R. & Clayton Smith (1993). "Backyards, NIMBY's and incinerator sitings: Implications for social movement theory." *Social Problems*, 40(1):25-39.

Westra, Laura and Peter Wenz (1995). *Faces of environmental racism: Confronting issues of global justice.* Rowman & Littlefield Publishers, Inc. Lanham, MA.

APPENDICES

APPENDIX A
Montgomery County Business and Industrial Demographics

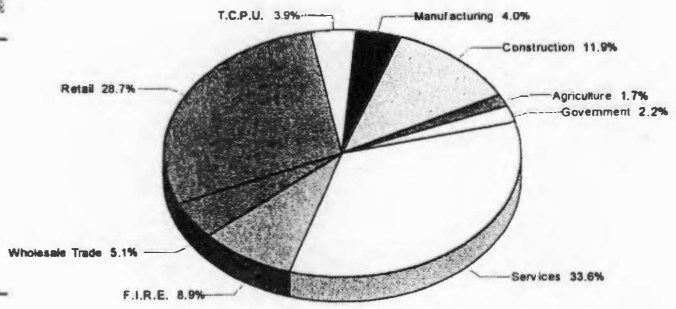
Montgomery County Business and Industrial Demographics

Clarksville-Montgomery County Economic Development Council
312 Madison Street
Clarksville, Tennessee 37040
(931) 647-2331
Website: www.clarksville.tn.us

ESTABLISHMENTS BY INDUSTRY

Industry	Number of Establishments
Agriculture	32
Construction	231
Manufacturing	78
T.C.P.U.	75
Retail Trade	556
Wholesale Trade	98
F.I.R.E.	172
Services	649
Government	43

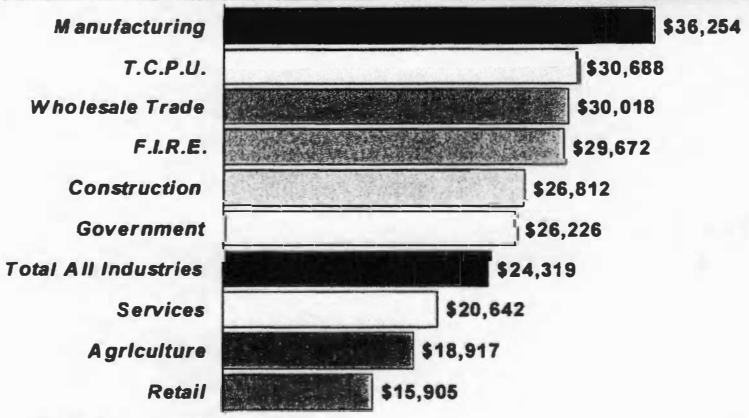
T.C.P.U. = Transportation, Communications, and Public Utilities
F.I.R.E. = Finance, Insurance, and Real Estate



EMPLOYMENT GROWTH BY INDUSTRY

Industry	1996 Employment	2001 Employment	5-Year Growth	5-Year Percent Growth
Construction	1,810	1,910	100	5.5%
Manufacturing	6,930	8,220	1,290	18.6%
T.C.P.U.	870	1,010	140	16.1%
Trade	9,470	11,080	1,610	17.0%
F.I.R.E.	1,360	1,310	-50	-3.7%
Services	6,340	10,460	4,120	65.0%
Government	8,590	9,850	1,260	14.7%
Total	35,370	43,840	8,470	23.9%

AVERAGE WAGES BY INDUSTRY, 2000



Source: TN Dept. of Labor and Workforce Development

For inquiries, please contact Daniel Merchant, Research Specialist for the Economic Development Council. E-mail: research@clarksville.tn.us

APPENDIX B
Income and Poverty Levels: Clarksville, Tennessee

TABLE 1:
INCOME AND POVERTY LEVELS: CLARKSVILLE, TENNESSEE

CENSUS TRACT	MEDIAN INCOME (dollars)	POVERTY PERCENT
Tract 1001	18,100	38.9
Tract 1002	25,977	15.8
Tract 1003	32,076	14.2
Tract 1004	19,348	35.1
Tract 1005	29,588	12.9
Tract 1006.01	46,290	1.7
Tract 1006.02	35,486	10.2
Tract 1007	28,750	9.4
Tract 1008 *	16,772	40.0
Tract 1009	25,130	21.1
Tract 1010.01	33,372	9.6
Tract 1010.02	39,073	12.4
Tract 1010.03	38,542	11.6
Tract 1012	36,839	8.8
Tract 1013.01	35,360	12.9
Tract 1013.02	42,414	6.7
Tract 1014	43,529	7.2
Tract 1015	46,190	7.6
Tract 1016	38,706	11.5
Tract 1017	39,674	9.3
Tract 1018.01	57,402	3.7
Tract 1018.02	47,134	4.1
Tract 1019.01	45,986	6.0
Tract 1019.02	63,750	2.4
Tract 1020	44,720	6.4

Source: U.S. Census Bureau. Census 2000 Summary File 3

APPENDIX C

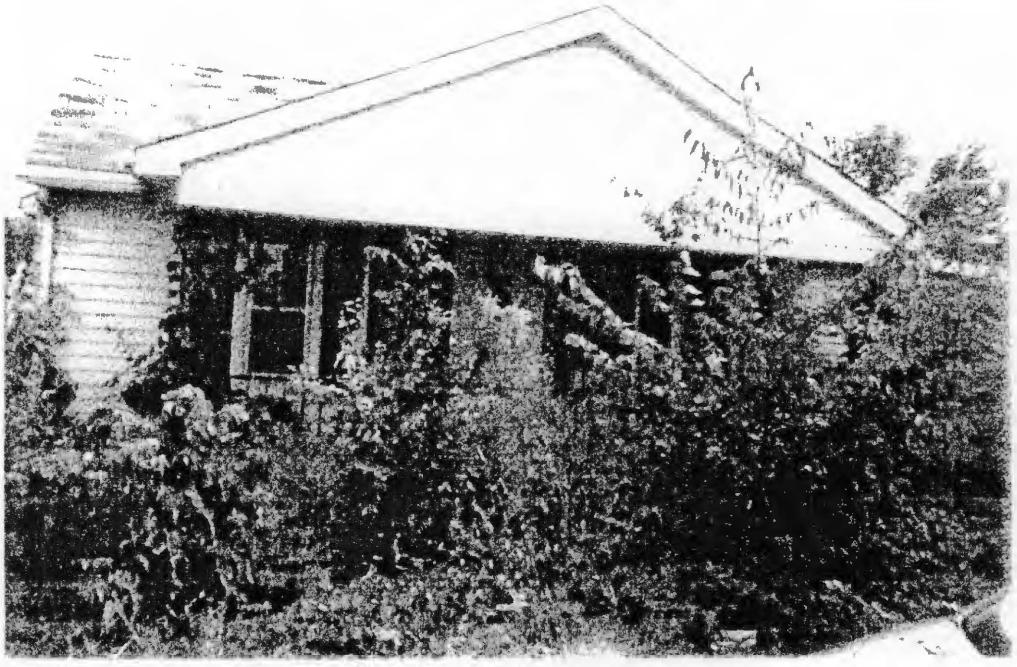
Unemployment Status In Clarksville, Tennessee

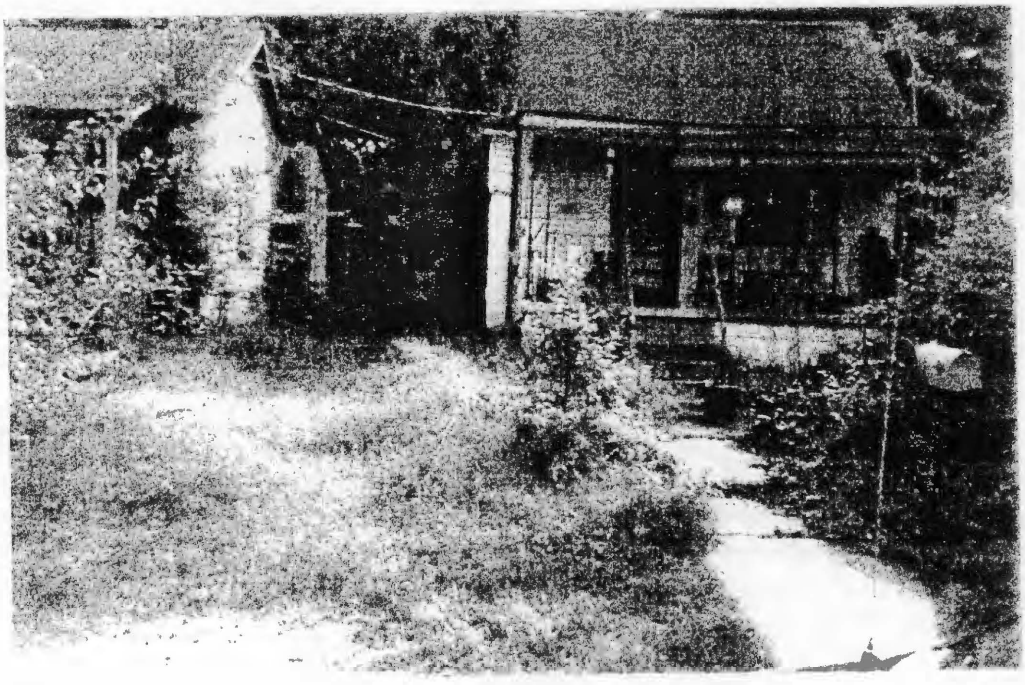
TABLE 2: UNEMPLOYMENT STATUS IN CLARKSVILLE, TENNESSEE

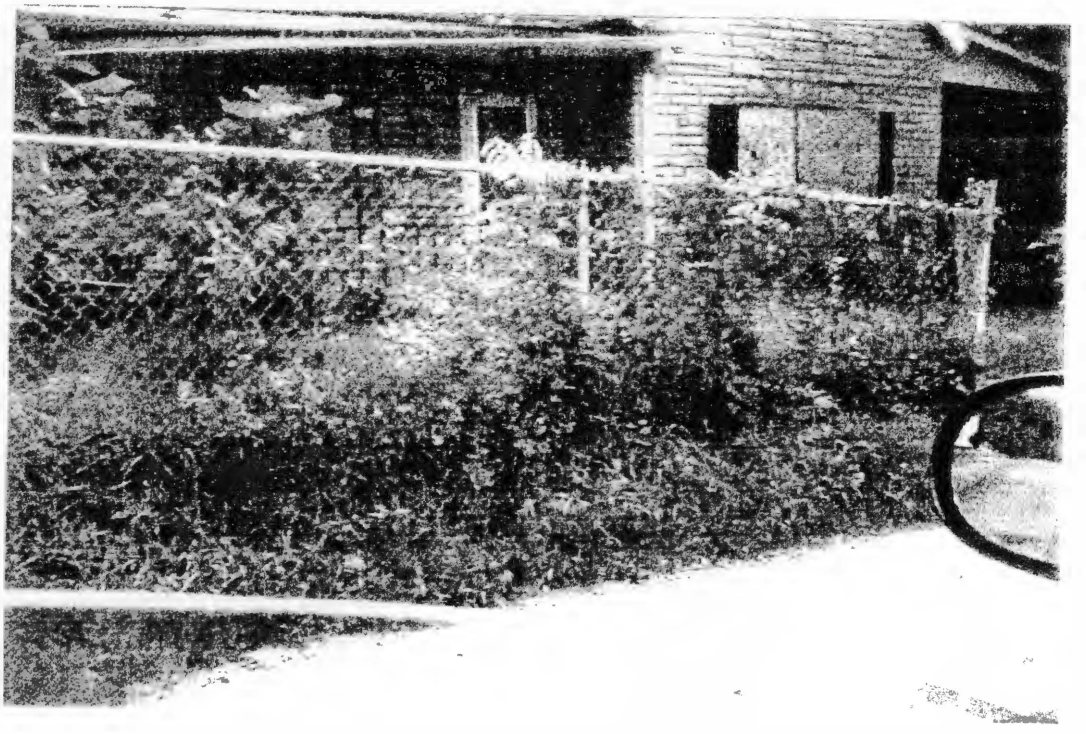
CENSUS TRACT	PERCENT UNEMPLOYED
Tract 1001	4.3
Tract 1002	13.2
Tract 1003	8.1
Tract 1004	12.0
Tract 1005	4.5
Tract 1006.01	7.3
Tract 1006.02	4.5
Tract 1007	5.8
Tract 1008	25.1
Tract 1009	18.1
Tract 1010.01	2.2
Tract 1010.02	6.6
Tract 1011.01	9.5
Tract 1011.02	9.0
Tract 1011.03	9.8
Tract 1012	5.6
Tract 1013.01	9.4
Tract 1013.02	6.6
Tract 1014	8.6
Tract 1015	4.9
Tract 1016	6.4
Tract 1017	2.1
Tract 1018.01	2.0
Tract 1018.02	2.9
Tract 1019.01	4.7
Tract 1019.02	1.2
Tract 1020	3.9

Source: U.S. Census Bureau, Census, 2000 Summary File 3, Matrices P26, P30, P31, P33, P43, P45, and P46

APPENDIX D
Pictures of RRC







APPENDIX E
Environmental Justice Principles

Environmental Justice Principles
Adopted, Washington D.C., October 1991
First National People of Color Environmental Leadership Summit
Preamble

We, the People of Color, gathered together at this multinational People of Color Environmental Leadership Summit, to begin to build a national and international movement of all peoples of color to fight the destruction and taking of our lands and communities, do hereby reestablish our spiritual interdependence to the sacredness of our Mother Earth; to respect and celebrate each of our cultures, languages, and beliefs about the natural world and our roles inhealing ourselves; to insure environmental justice; to promote economic alternatives which would contribute to the development of environmentally safe livelihoods; and to secure our political, economic, and cultural liberation that has been denied over 500 years of colonization and oppression, resulting in the poisoning of our communities and land and the genocide of our peoples do affirm and adopt these Principles of Environmental Justice:

1. Environmental Justice affirms the sacredeness of Mother Earth, ecological unity and the interdependence of all species, and the right to be free from ecological destruction.

2. Environmental Justice demands that public policy be based on mutual respect and justice for all people, free from any form of discrimination and bias.

3. Environmental Justice mandates the right to ethical, balanced and responsible uses of land and renewable resources in the interest of a sustainable planet for humans and other living things.

4. Environmental Justice calls for universal protection from nuclear testing, extraction, production and disposal of toxic/hazardous wastes and poisons and nuclear testing that threaten the fundamental right to clean air, land, water, and

food.

5. Environmental Justice affirms the fundamental right to political, economic, cultural and environmental self-determination of all peoples.

6. Environmental Justice demands the cessation of production of all toxins, hazardous wastes and radioactive materials and that all past and current producers be held strictly accountable to the people for detoxification and the containment at the point of production.

7. Environmental Justice demands the right to participate as equal partners at every level of decision-making including needs assessment, planning, implementation, enforcement, and evaluation.

8. Environmental Justice affirms the right of all workers to a safe and healthy work environment, without being forced to choose between an unsafe livelihood and unemployment. It also affirms the right of those who work at home to be free from environmental hazards.

9. Environmental Justice protects the right of victims of environmental injustices to receive full compensation and reparations for damages as well as quality health care.

10. Environmental Justice considers government acts of environmental injustice a violation of international law, the Universal Declaration On Human Rights, and the UN Convention on Genocide.

11. Environmental Justice must recognize a special legal and natural relationship of Native Peoples to the U.S. government through treaties, agreements, compacts, and convenants affirming sovereignty and self-determination.

12. Environmental Justice affirms the need for an urban and rural ecological policies to clean up and rebuild our cities and rural areas in balance with

nature, honoring the cultural integrity of all our communities, and providing fair access for all to the full range of resources.

13. Environmental Justice calls for the strict enforcement of principles of informed consent, and a halt to the testing of experimental reproductive and medical procedures and vaccinations on people of color.

14. Environmental Justice opposes the destructive operations of multi-national corporations.

15. Environmental Justice opposes military occupation, repression and exploitation of lands, peoples and cultures, and other life forms.

16. Environmental Justice calls for the education of present and future generations which emphasizes social and environmental issues, based on our experience and an appreciation of our diverse cultural perspectives.

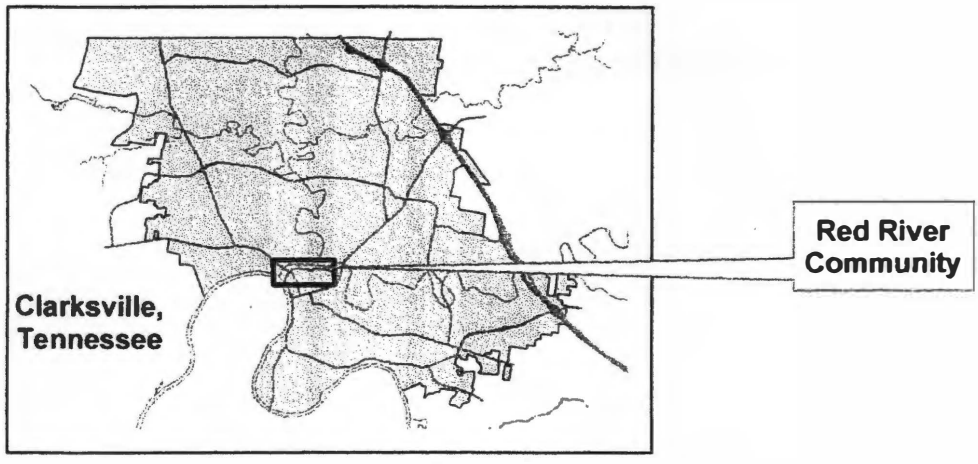
17. Environmental Justice requires that we, as individuals, make personal and consumer choices to consume as little of Mother Earth's resources and prouduce as little waste as possible; and make the conscious decisions to challenge and reprioritize our lifestyles to insure the health of the natural world for present and future generations.

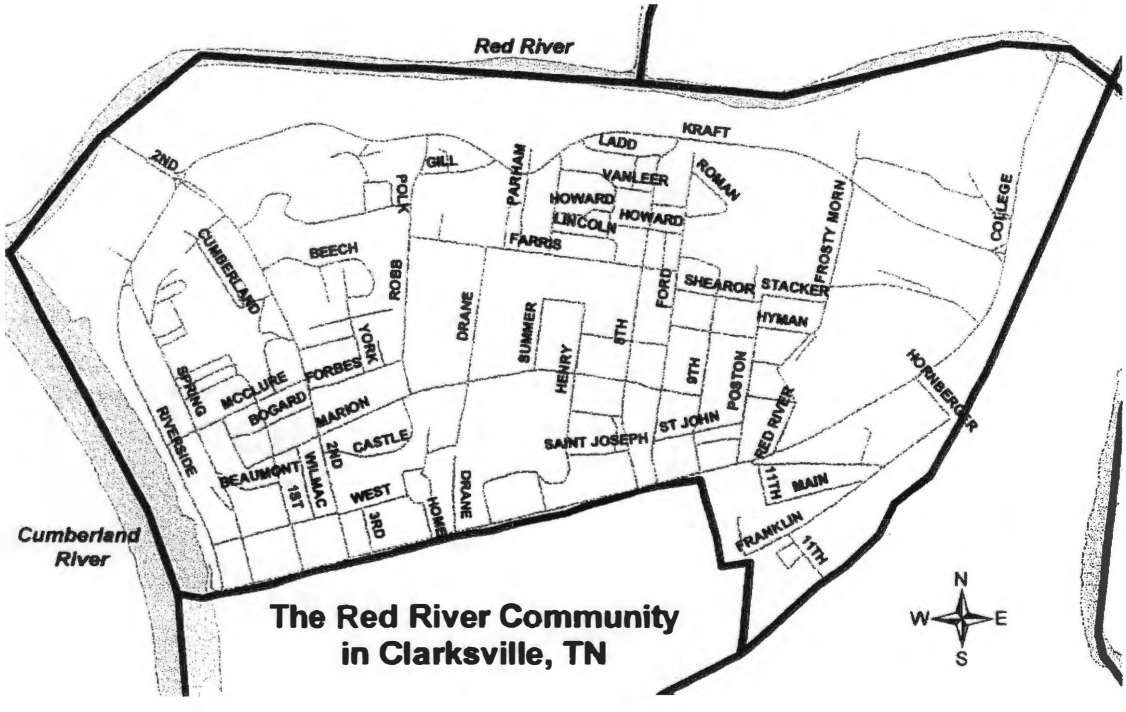
---

back to top

APPENDIX F

Maps of Streets in the Red River Community in relations to Clarksville, Tennessee


Red River
Community
Clarksville,
Tennessee


Red River
KRAFT
LADD
VANLEER
ROMAN
HOWARD
LINCOLN
HOWARD
FARRIS
GILL
PARHAM
POLK
BEECH
ROBB
DRANE
SUMMER
HENRY
8TH
FORD
SHEAROR
STACKER
FROSTY MORN
COLLEGE
HYMAN
9TH
POSTON
RED RIVER
HORNBERGER
ST JOHN
SAINT JOSEPH
CUMBERLAND
2ND
YORK
FORBES
MCCLURE
BOGARD
MARION
CASTLE
SPRING
RIVERSIDE
BEAUMONT
1ST
WILMAC
2ND
WEST
3RD
HOWE
DRANE
11TH
MAIN
FRANKLIN
11TH
Cumberland
River
The Red River Community
in Clarksville, TN
N
W
E
S

APPENDIX G

Protocol Schedule and Participation Overview

PROTOCOL SCHEDULE

Assessing Environmental Concern and Justice in Clarksville, Tennessee

I'd like to start by asking you to tell me:

1. How long have you lived in this community?_____ months or years.

Describe how life has been for you living in this community.

---

2. Where do you think the Red River community begins and ends?(i.e, like streets, landmarks, buildings)

Are there areas that are no longer considered part of the Red River community?

If yes, explain to me why this is the case.

3. Would you describe this area (Red River community) for me.

4. Is the Red River community the only place you have lived in Clarksville?

If No, where else have you lived, and for how long?

Why did you move to this area of Clarksville?

5. Do you think of the Red River community as a predominantly black community in Clarksville?

If so, why do you think of the community as consisting of predominantly black residents?

Now, I am going to ask you some questions about issues in the Red River community that I would like you to answer to the best of your ability.

6. Are you aware of any problems that exist in the Red River community?

If so, describe these problems for me.

How do you feel about the problems you just described?

What do you think are the reasons that these problems are occurring in this community?

---

7. Describe how these problems affect your everyday life.

---

8. Are there other problems that you are aware of?

If so, can you tell me about them

9. What are your awareness of any attempts by individuals or organizations to solve problems in the Red River community?

10. Any suggestions on how to minimize these problems in the Red River community?

If Yes, please provide ways you feel these problems should be addressed.

11. Can you name any positive aspects of living in the Red River community

Describe what has been good about living in this community.

12. Is there any thing else about the Red River community that you think would be helpful for me to know about?

13. Do you own or rent your home?

14. I have a draft of a questionnaire that I would appreciate if you would fill it out for me at this time. In the near future, I will be sending this questionnaire to a sample of individuals from the Red River community. However, for now, I would like to hear any comments you may have about this questionnaire. Please tell me if any question puzzle you are confuses you.

How did you feel about the questions on the questionnaire?

Were they clear and easy to understand?

Do you like the cover design of the questionnaire? Is it appropriate for this study?

Anything else you would like to share about the questionnaire.

Did I fail to ask a question about the Red River community I should have asked?

DEMOGRAPHIC INFORMATION:

Date of Interview_____

Interviewee #_____

Site of Interview_____

Beginning Time of Interview_____

Ending time of Interview_____

Gender of interviewee_____

Race of interviewee_____

PARTICIPATION OVERVIEW

"Good _____. My name is Shirley Rainey. I am a Ph.D student in Sociology at The University of Tennessee. Also, I am an Assistant Professor of Sociology at Austin Peay State University.

This interview is being conducted to get your opinions about environmental concern and justice in the Red River community. I am especially interested in any problems you have faced or are aware of and recommendations you have. The interview will take less than one hour and you are free to end it at any time.

If it is okay with you, the interview will be taped on audiocassette. I will also be using a lap-top computer as you are talking. The purpose of this is so that I can get all the details but at the same time be able to carry on an attentive conversation with you. Your contribution to this study will be used for writing my doctoral dissertation, journal articles, and hopefully as the basis for a book. While I will be glad to provide a copy of any publication(s) to participants, no compensation for participating will be forthcoming.

I assure you that all your comments will remain confidential. To protect your identity all interviews will be numbered and stored in a locked filing cabinet. Also, all personal references will be removed from your transcripts. I will be compiling a report which will contain all the comments from interviewees without any reference to individuals. If you agree to this interview and the tape recording, please sign this consent form.

Your participation in this study is voluntary and you may decline to participate at any time. You can refuse to answer any questions and can drop out of the research at any time. If you drop out of the research project, any information you have provided will be destroyed.

Thank you for your consideration, The study will greatly benefit from your participation. If you have any questions about the study, please contact the researcher, Shirley Rainey, Austin Peay State University (931)221-7506 or e-mail at raineysa@apsu.edu.

APPENDIX H
Informed Consent Form

INFORMED CONSENT FORM

Assessing Environmental Concern and Justice in Clarksville, Tennessee

It is my understanding that by agreeing to participate in the project, " Assessing Environmental Concern and Justice in Clarksville, Tennessee" my rights, welfare and privacy will be maintained in the following ways:

1. I have had the details of the research study explained to me by the research investigator.

2. I understand the procedures and have been made aware of the possible risk involved.

3. All responses that I give to questions will be confidential and be accessible only to the research investigator and her faculty advisor unless I choose to waive confidentiality.

4. I understand that I will receive no compensation for participating in this research study.

5. In signing this consent form, I have not waived any of my legal rights nor have I released this institution/agency form liability for negligence.

I have been informed of this information in written or verbal form. All of my questions have been answered by the researcher. If further questions arise about the study, I can call the research investigator, Ms. Shirley Rainey at (931) 221-7506 or (931) 920-0208. I freely and voluntarily agree to participate in this research study.

_____ _____

Signature of Volunteer Date

_____ _____

Signature of Witness Date

APPENDIX I

Survey Information Sheet and Survey Instrument

SURVEY INFORMATION SHEET

Hello, my name is Ms. Shirley A. Rainey. I am a Ph.D student in Sociology at The University of Tennessee. Also, I am an Assistant Professor of Sociology at Austin Peay State University in Clarksville, Tennessee. I invite you to participate in this study assessing environmental concern and justice in Clarksville, Tennessee. The purpose is to examine your opinions about environmental concerns and justice in the Red River community. However, the study will be conducted in two parts. The first part consists of in-depth interviews and the second part consists of mail surveys. The results of the in-depth interviews will be used to enhance an understanding of the research issues and to refine the mail survey instrument.

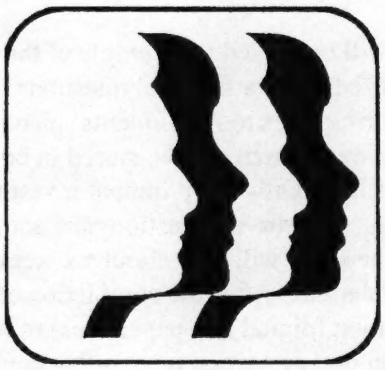
The mail survey questionnaire will be mailed to a sample of the population 18 years or older asking them to answer a standardized set of attitudinal questions. The questionnaires will consist of an identifying number that corresponds to respondents' identifying information. All identifying information for the mail survey research will be stored in both digital and paper form in a locked cabinet in the researcher's office. Only the principal investigators will have access to your identifying information and/or data. The survey questionnaire should take approximately 30 minutes to fill out. Data collection of the study will take about six weeks. The information you provide on the survey will be kept confidential. After the completion of the survey implementation, all identifying information (digital and paper files) of respondents will be destroyed. No reference will be made in oral or written reports that could link you to the study.

Your contribution to this study will be used for writing my dissertation, journal articles, and hopefully as the basis for a book. While I will be glad to provide a copy of any publication(s) to participants resulting from this study, no compensation will be provided for participating in this study. Your participation in this study is voluntary, you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at anytime without penalty. If you withdraw from the study before data collection is completed your data will be returned to you or destroyed. Return of the completed survey (questionnaire) constitutes your consent to participate.

Thank you for your consideration. Your participation in this study is highly appreciated. If you have any questions about the study, please feel free to contact the researcher, Ms. Shirley Rainey at (931)221-7506 Austin Peay State University, Clarksville, Tennessee 37044 or by e-mail at raineysa@apsu.edu

Public Concern about Issues Facing Your Community:

A Study of Neighborhoods in Clarksville, Tennessee



Conducted by Shirley A. Rainey
Department of Sociology,
Austin Peay State University
PO BOX 4724
Clarksville, TN 37044

Thank you for volunteering to help us with this important research. It is about important social and environmental issues facing the City of Clarksville and your neighborhood.

Instructions

- **Please answer each question by circling the response that best reflects your view or answer.**
- **Please circle only one response for each question or item.**
- **Please do not skip any questions unless instructed.**
- **Please return the completed questionnaire as soon as possible in the stamped envelope provided.**

---

1. Do you currently live in Clarksville, Tennessee?

1. No *(Please skip to Q23 on page 10)*
2. Yes

2. The Red River Community includes all of the houses, schools, buildings, businesses, parks, rivers, streams, etc. located on, or near, Kraft Street, College Street, and Riverside Drive (see map on page 2).

Do you currently live in the Red River Community of Clarksville, Tennessee?

1. No
2. Yes *(Please skip to Q4)*

3. Do you currently live within five miles of the Red River Community?

1. Yes *(Please skip to Q5)*
2. Unsure *(Please skip to Q5)*
3. No *(Please skip to Q5)*

4. How long have you lived in the Red River Community?

1. Less than 5 years
2. 5-9 years
3. 10-19 years
4. 20-29 years
5. 30-39 years
6. 40-49 years
7. 50-59 years
8. 60-69 years
9. 70-79 years
10. 80 or more years

5. **Next, we would like to know your views about living in your NEIGHBORHOOD. Listed below are statements about different aspects of your neighborhood. Please tell us how much you AGREE or DISAGREE with each one by CIRCLING the response that BEST represents your views based on the following scale.**

Strongly Agree (SA = 1)	Agree (A= 2)	Neither Agree or Disagree (N =3)	Disagree (D= 4)	Strongly Disagree (SD = 5)

		SA	A	N	D	SD
a.	My neighborhood is nice place to live.	1	2	3	4	5
b.	My neighborhood is a nice place to raise a family.	1	2	3	4	5
c.	My neighborhood is a nice place to visit.	1	2	3	4	5
d.	My neighborhood is a nice place to move to.	1	2	3	4	5
e.	I would like to move away from this neighborhood.	1	2	3	4	5
f.	People are friendly in my neighborhood.	1	2	3	4	5
g.	The churches serve many of the needs of my neighborhood.	1	2	3	4	5
h.	The schools in my neighborhood prepare our children for the future.	1	2	3	4	5
l.	Crime is a problem in my neighborhood.	1	2	3	4	5
j.	There aren't enough jobs available in my neighborhood.	1	2	3	4	5
k.	Poverty is a problem in my neighborhood.	1	2	3	4	5
i.	Racial discrimination and prejudice are problems for people living in my neighborhood.	1	2	3	4	5
m.	Drug/alcohol abuse is a problem in my neighborhood.	1	2	3	4	5
n.	Access to adequate health care is a problem in my neighborhood	1	2	3	4	5
o.	The quality of the natural environment (air, water, (rivers, green areas, etc.) is a problem in my neighborhood.	1	2	3	4	5
p.	The quality of the built environment (houses, buildings, streets, etc.) is a problem in my neighborhood.	1	2	3	4	5

Next, we would like to ask you about the NATURAL environment—the air, water, rivers, green areas etc.

6. **Overall, how would you rate the quality of the NATURAL environment in *CLARKSVILLE*?**

   1. Very Good
   2. Fairly Good
   3. Neither Good or Bad
   4. Fairly Bad
   5. Very Bad

7. **Overall, how would you rate the quality of the NATURAL environment in your NEIGHBORHOOD?**

   1. Very Good
   2. Fairly Good
   3. Neither Good or Bad
   4. Fairly Bad
   5. Very Bad

8. **Overall, how would you rate the quality of the BUILT environment—the houses, buildings, streets, and the like—in your NEIGHBORHOOD?**

   1. Very Good
   2. Fairly Good
   3. Neither Good or Bad
   4. Fairly Bad
   5. Very Bad

9. **Overall, how satisfied are you with living in your NEIGHBORHOOD?**

   1. Very Satisfied
   2. Somewhat Satisfied
   3. Neither Satisfied or Dissatisfied
   4. Somewhat Dissatisfied
   5. Very Dissatisfied

10. **Compared to other areas in Clarksville, how would you rate the overall quality of life in your NEIGHBORHOOD?**

    1. Much Better
    2. A Bit Better
    3. About the same
    4. A Bit Worse
    5. Much Worse

11. Next we would like to know if you are CONCERNED or UNCONCERNED about different aspects of the environment in your NEIGHBORHOOD. Please CIRCLE your level of concern for each one based on the following scale.

Very Concerned (VC = 1)	Somewhat Concerned (SC= 2)	Neither Concerned or Unconcerned (N =3)	Somewhat Unconcerned (SU= 4)	Very Unconcerned (VU= 5)

		VC	SC	N	SU	VU
a.	Litter, dirt and debris	1	2	3	4	5
b.	The quality of the drinking water	1	2	3	4	5
c.	Waste dumps and garbage landfills	1	2	3	4	5
d.	Exposure to wastes and pollution	1	2	3	4	5
e.	Loss of trees, green space, and wildlife	1	2	3	4	5
f.	Agricultural wastes and run-off	1	2	3	4	5
g.	Lead paint & lead poisoning	1	2	3	4	5
h.	Rats, mice or cockroach problems	1	2	3	4	5
I.	Flooding and water damage	1	2	3	4	5
j.	Abandoned homes and empty lots	1	2	3	4	5
k.	The condition of public buildings and facilities	1	2	3	4	5
l.	The condition of the streets and roads	1	2	3	4	5
m.	The condition of green areas and open spaces	1	2	3	4	5
n.	The condition of the streams and rivers	1	2	3	4	5

12. How CONCERNED or UNCONCERNED are you about the quality of the OVERALL environment in your NEIGHBORHOOD?

1. Very Concerned
2. Somewhat Concerned
3. Neither Concerned or Unconcerned
4. Somewhat Unconcerned
5. Very Unconcerned

13. Overall, how serious are environmental problems in your NEIGHBORHOOD?

1. Very Serious
2. Serious
3. Unsure
4. Less than Serious
5. Not Serious at All

14. People MAY or MAY NOT experience certain side effects of environmental problems. Below is a list of some of these things. Please tells us if you think any member of your current household (including yourself) has EXPERIENCED each one as a result of poor environmental conditions in your NEIGHBORHOOD.

Very Likely (VL = 1) Likely (L= 2) Don't Know (DK =3) Unlikely (UN= 4) Very Unlikely (VU= 5)

	VL	L	DK	UN	VU
a. Stress or emotional problems	1	2	3	4	5
b. Stomach or body aches	1	2	3	4	5
c. Headaches	1	2	3	4	5
d. Nervous disorders	1	2	3	4	5
e. Loss of appetite	1	2	3	4	5
f. Significant weight loss or gain	1	2	3	4	5
g. Skin rashes or skin problems	1	2	3	4	5
h. Memory loss or learning disabilities	1	2	3	4	5
I. Breathing problems, asthma or allergies	1	2	3	4	5
j. Other (*Specify*_____)	1	2	3	4	5

15. The next set of questions ask you about actions you MAY or MAY NOT have taken to better UNDERSTAND and/or IMPROVE environmental conditions in CLARKSVILLE or in your NEIGHBORHOOD. Please tell us how often you have done these things.

	Very Often	Often	Sometimes	Rarely	Never
a. Read the newspaper	1	2	3	4	5
b. Attended community meetings	1	2	3	4	5
c. Talked to my family	1	2	3	4	5
d. Talked to my friends/neighbors	1	2	3	4	5
e. Talked to my doctor	1	2	3	4	5
f. Participated in clean-ups	1	2	3	4	5
g. Contacted a public official/agency	1	2	3	4	5
h. Donated my time or money	1	2	3	4	5
I. Signed a petition	1	2	3	4	5
j. Joined or organized others	1	2	3	4	5
k. Contacted an environmental group	1	2	3	4	5
l. Worked with an environmental group	1	2	3	4	5
m. Recycled/reduced household wastes	1	2	3	4	5
n. Avoided certain household products	1	2	3	4	5
o. Drank bottled or purified water	1	2	3	4	5
p. Used less poisons and chemicals	1	2	3	4	5
q. Other (*Specify*_____)	1	2	3	4	5

16. **Overall, how involved are you in trying to better UNDERSTAND and/or IMPROVE environmental conditions in your NEIGHBORHOOD?**

1. Very Involved
2. Somewhat Involved
3. Slightly Involved
4. Rarely Involved
5. Not involved at all

17. **The next set of questions ask for your views about what HAS, or HAS NOT been done, by LOCAL (county & city) public agencies and officials about IMPROVING environmental conditions in your NEIGHBORHOOD.**

Strongly Agree (SA = 1)	**Mildly Agree (MA= 2)**	**Neither Agree or Disagree (N =3)**	**Mildly Disagree (MD=4)**	**Strongly Disagree (SD= 5)**	**Don't Know (DK= 6)**

		SA	MA	N	MD	SD	DK
a.	They ask the community for its input.	1	2	3	4	5	6
b.	They hold meetings about these problems.	1	2	3	4	5	6
c.	They inform us about these problems.	1	2	3	4	5	6
d.	They involve us in the decision-making process	1	2	3	4	5	6
e.	They ignore our environmental concerns.	1	2	3	4	5	6
f.	They enforce environmental laws & regulations	1	2	3	4	5	6
g.	They do not spend enough money on them.	1	2	3	4	5	6
h.	They spend too much time and money on other communities.	1	2	3	4	5	6
l.	They exposed us to more than a fair share of pollution and degradation.	1	2	3	4	5	6
j.	They do a good job at addressing concerns about the environment among minorities.	1	2	3	4	5	6
k.	They let these things happen because they do not care about minorities.	1	2	3	4	5	6

18. **Overall, how satisfied are you with the job LOCAL (county & city) agencies and officials have been doing to improve ENVIRONMENTAL conditions in your NEIGHBORHOOD?**

1. Very Satisfied
2. Somewhat Satisfied
3. Neither Satisfied or Dissatisfied
4. Somewhat Dissatisfied
5. Very Dissatisfied
6. Don't Know

19. **Overall, how satisfied are you with the job LOCAL agencies and officials have done to improve the condition of blacks and other minorities living in your NEIGHBORHOOD?**

1. Very Satisfied
2. Somewhat Satisfied
3. Neither Satisfied or Dissatisfied
4. Somewhat Dissatisfied
5. Very Dissatisfied
6. Don't Know

20. **In your opinion, how UNLIKELY or LIKELY have people living in your NEIGHBORHOOD been exposed to environmental pollution and degradation because of racial prejudice or discrimination?**

1. Very Unlikely
2. Unlikely
3. Likely
4. Very Likely
5. Don't Know

21. **Generally speaking, do you think blacks and other minorities suffer LESS or MORE from environmental pollution and degradation than whites?**

1. A Great Deal Less
2. Somewhat Less
3. About the same amount
4. Somewhat More
5. A Great Deal More
6. Don't Know

22. **Generally speaking, do you think minorities are MORE or LESS concerned about environmental pollution and degradation than whites?**

1. A Great Deal More
2. Somewhat More
3. About the same amount
4. Somewhat Less
5. A Great Deal Less
6. Don't Know

23. Do you live by a polluting industrial facility or business?

1. No *(Please skip to Q25)*

2. Yes

24. How close do you live from a polluting industrial facility or business?

1. Less than 1 mile
2. 1-2 miles
3. Between 3 and 5 miles
4. 5 miles or more
5. Don't Know

25. Do you live by a polluted stream or river?

1. No *(Please skip to Q27)*

2. Yes

26. How close do you live from a polluted stream or river

1. Less than 1 mile
2. 1-2 miles
3. Between 3 and 5 miles
4. 5 miles or more
5. Don't Know

These last items are demographic questions that will be used for STATISTICAL PURPOSES ONLY. We can assure you that your individual responses will not be associated with you but will remain CONFIDENTIAL.

27. What is your gender?

1. Female
2. Male

28. In what year were you born?

1. 19_____.

29. **What was your household's total annual income before taxes in 2002?** *(Please do not include welfare, child support, Social Security, pensions, unemployment, or other such payments.).*

1. Less than $14,999
2. $15,000- $24,999
3. $25,000-$34,999
4. $35,000-$49,999
5. $50,000- $74,999
6. $75,000-$100,000
7. More than $100,0000
8. Don't Know

30. **Which of the following BEST represent your highest level of formal education?**

1. Less than High School
2. Some High School
3. High School Diploma or GED
4. Some College
5. College Degree (Undergraduate)
6. More than a College Degree (Some graduate work or a graduate degree)

31. **What race or ethnicity do you identify yourself with the most?**

1. African American/Black
2. Non-Hispanic White
3. Hispanic or Latino
4. Native American
5. Asian
6. Other (Please Specify) _____

32. **Which of the following BEST describes your current work status?**

1. Employed Full-time
2. Employed Part-time
3. Retired
4. Unemployed
5. Student
6. Homemaker
7. Other *(Please describe)*_____

33. **Which of the following BEST describes your political affiliation?**

1. Liberal Democrat
2. Moderate Democrat
3. Independent
4. Moderate Republican
5. Conservative Republican

Thank you so much for helping us with this important research. We realize you may have other comments or opinions that you were not able to express in this survey. We invite you to write any comment about these issues, or the survey itself, in the space provided below.

Please note that the return of this questionnaire will constitute your informed consent to participate in this study. Please return your completed survey in the enclosed stamped self-addressed envelope. If you would like to receive a summary of the survey results, please contact Ms. Shirley Rainey, Department of Sociology, Austin Peay State University, P.O. Box 4724, Clarksville, Tennessee 37044. Telephone 221- 7506

Again, thank you for volunteering your time to help us with this important study.

VITA

Shirley Ann Rainey grew up in Mobile, Alabama. She attended schools in the public system of Mobile County, Alabama where she graduated from Murphy High School in 1973 . She attended the University of South Alabama and graduated with a degree in Sociology in 1977. In 1984, she entered the Master's program in Sociology at Western Kentucky University in Bowling Green, Kentucky and graduated with a master's degree in 1987. She then pursued her second master's degree from Western Kentucky University in Student Personnel in Higher Education and Counseling and graduated in 1988.

She entered the Ph.D program in Sociology at the University of Tennessee, Knoxville in August, 1997. The doctoral degree was received December 2003. She is presently an Assistant Professor in the Political Science, Social Work and Sociology Department at Austin Peay State University in Clarksville, Tennessee.